

BEST AVAILABLE COPY

1/116

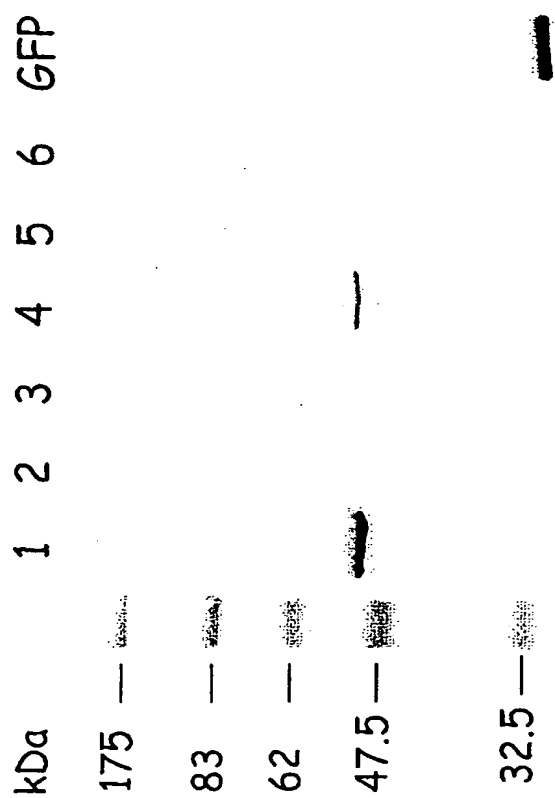


FIGURE 1

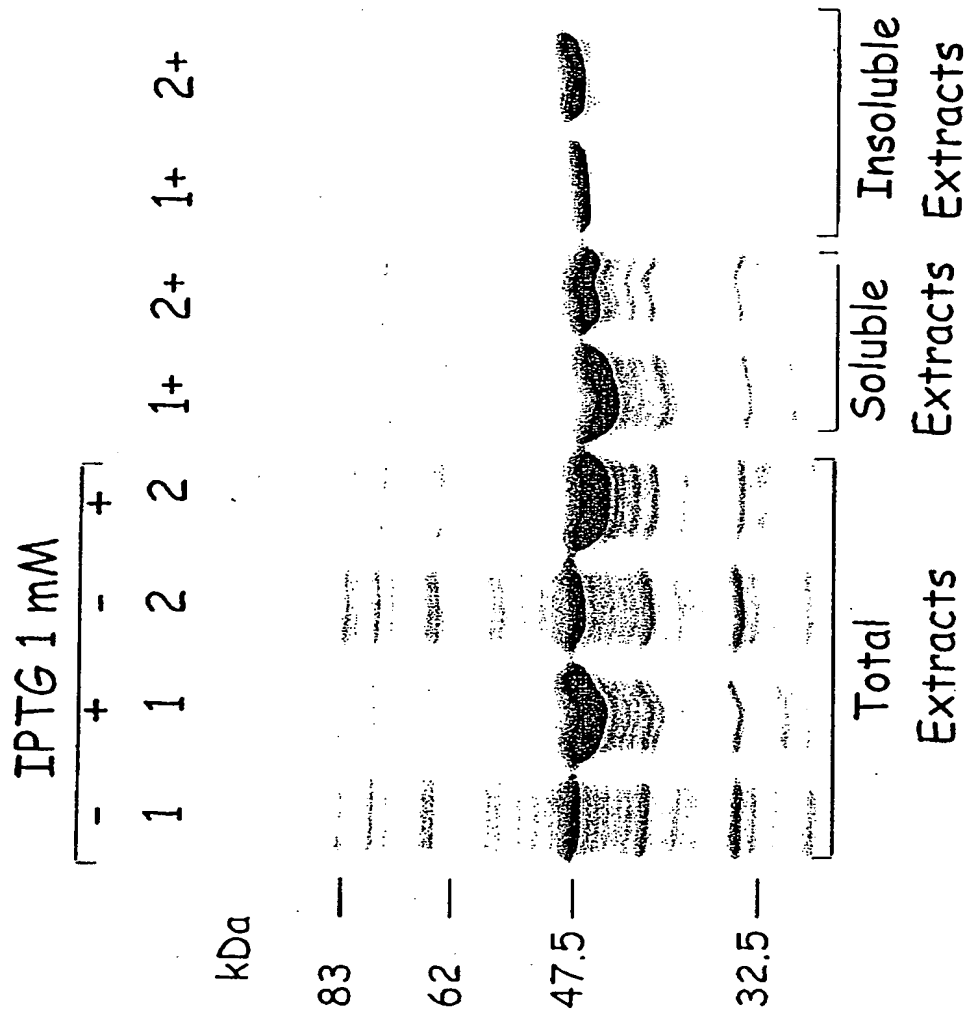


FIGURE 2

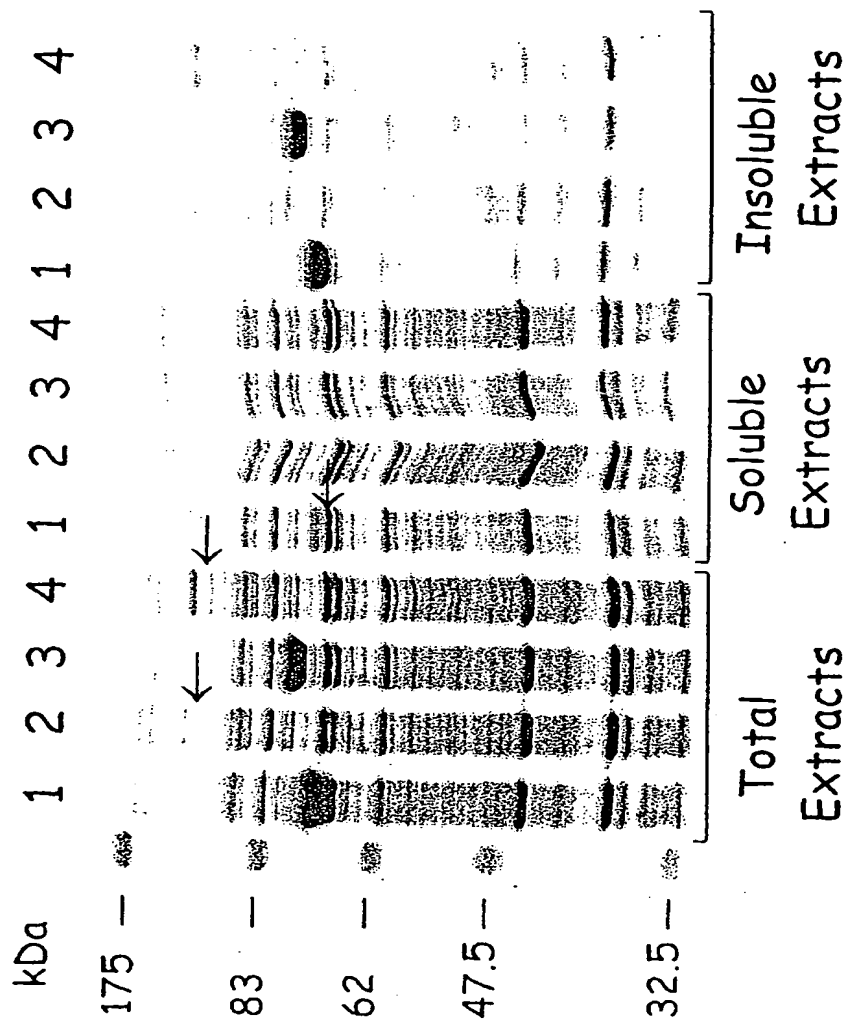


FIGURE 3

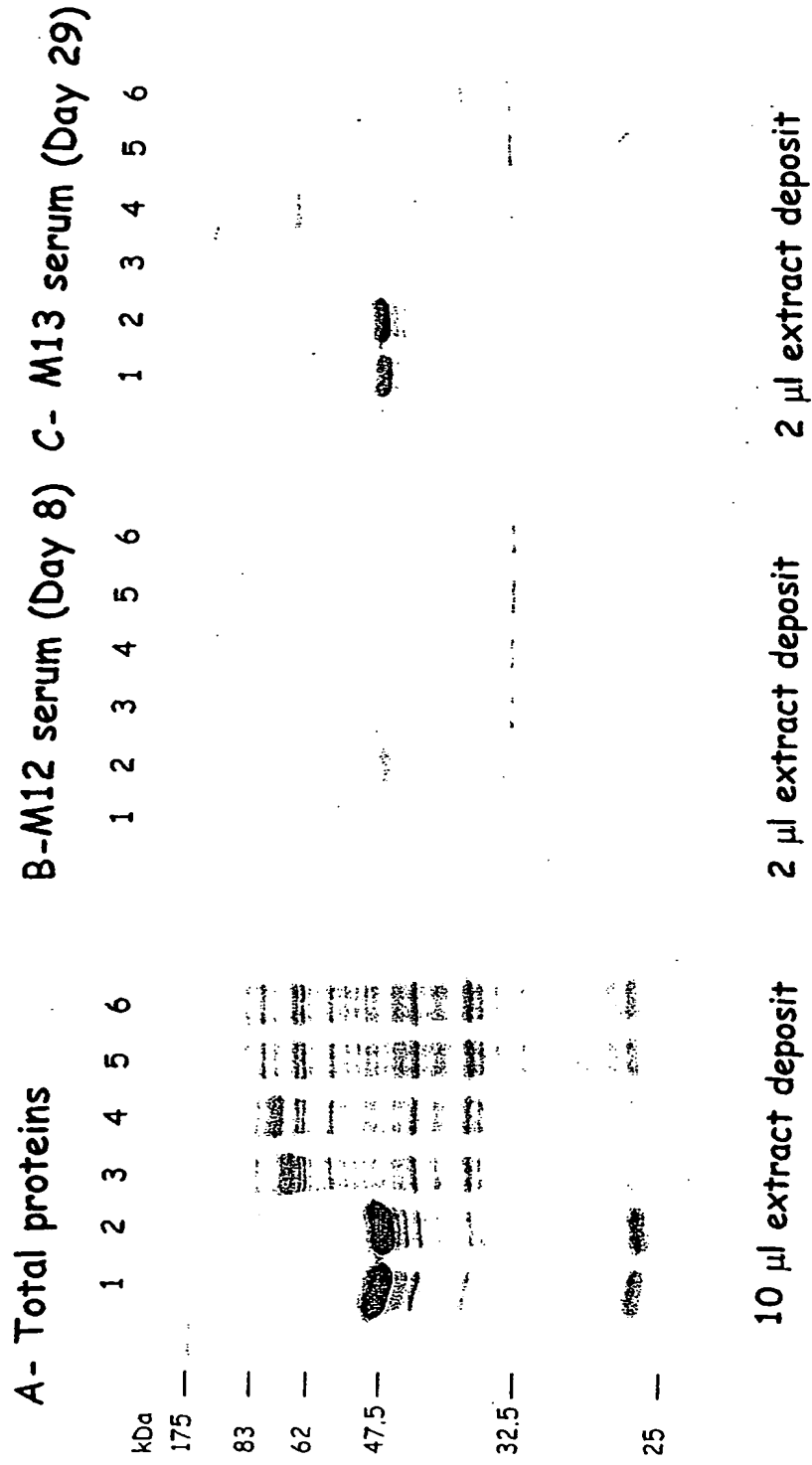


FIGURE 4

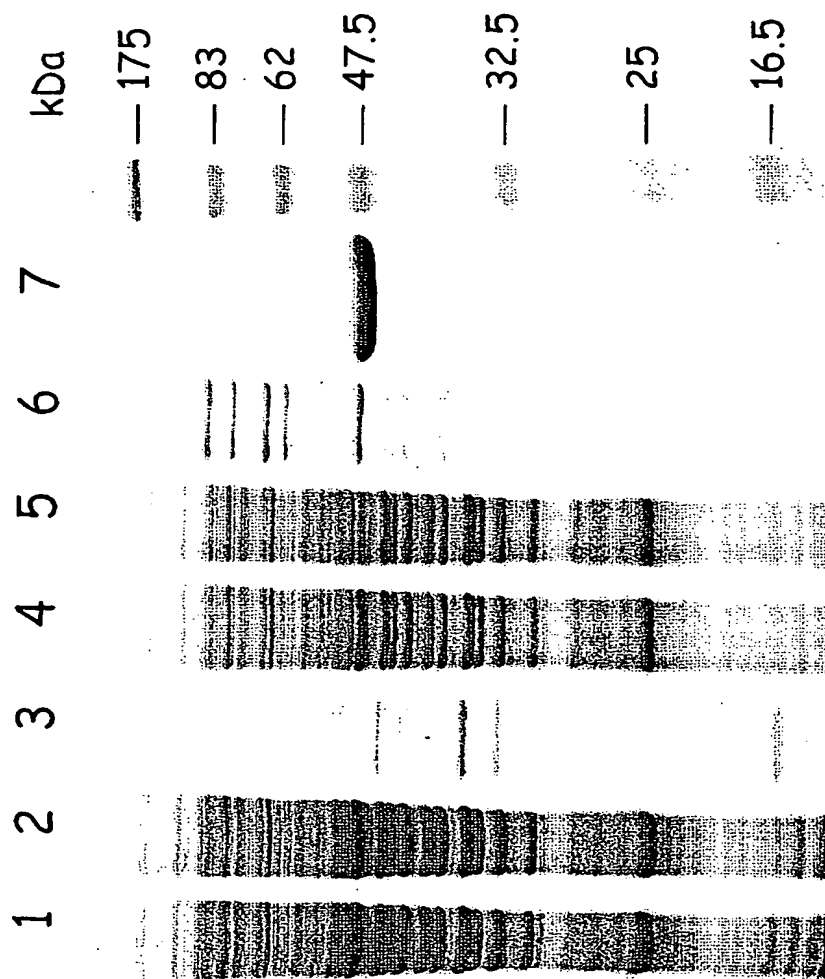


FIGURE 5

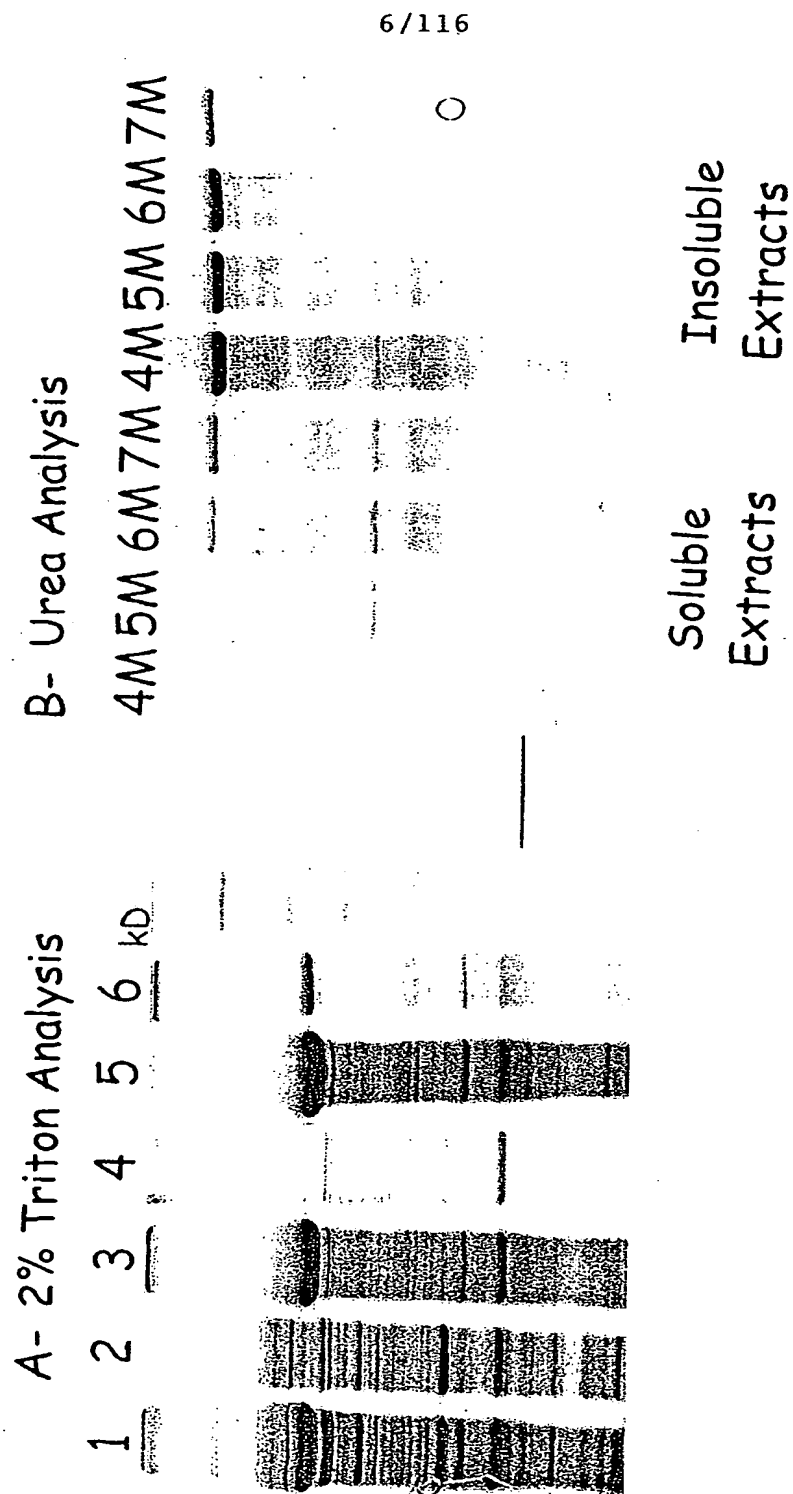


FIGURE 6

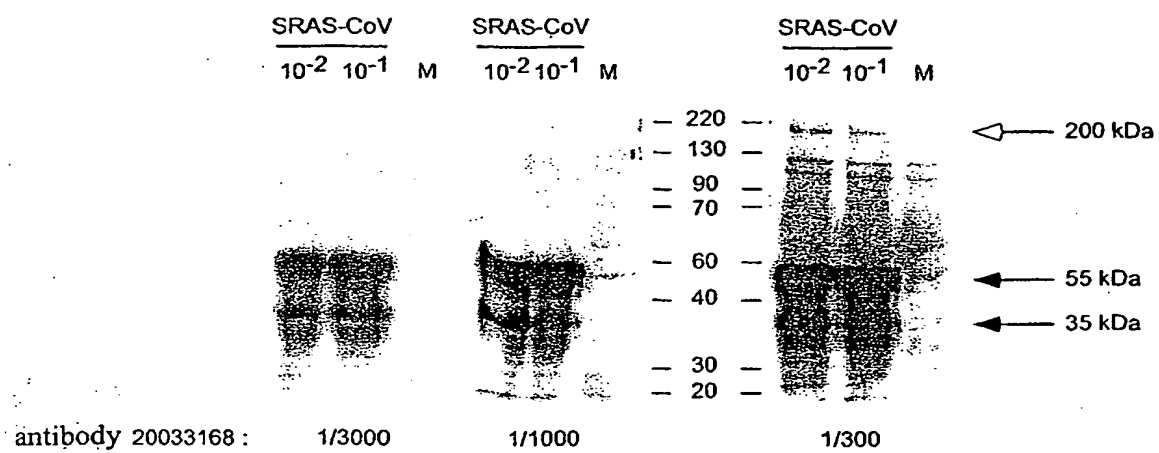


FIGURE 7

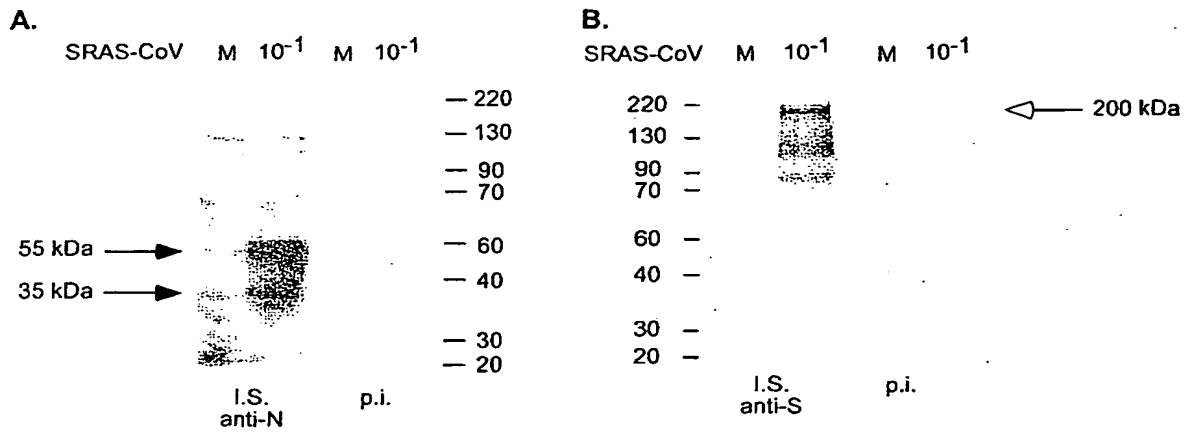
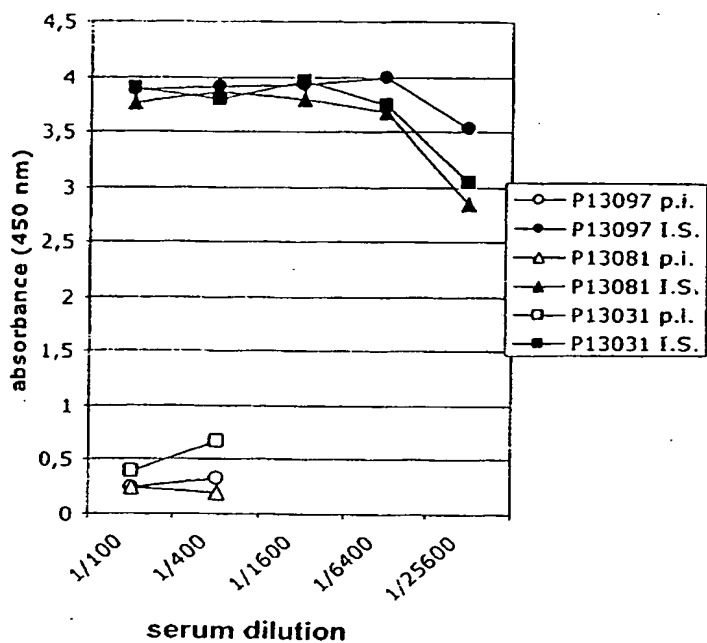


FIGURE 8

A



B

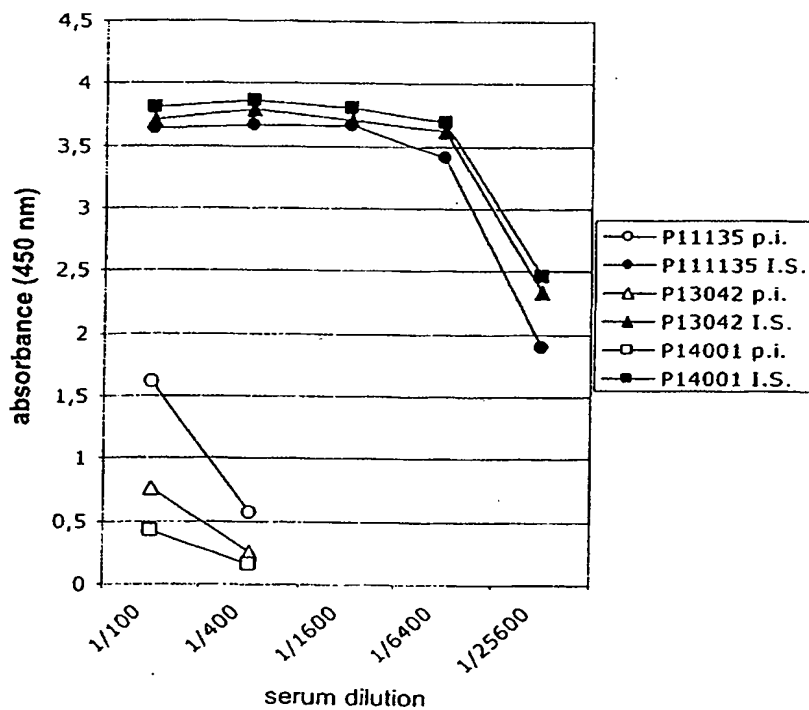


FIGURE 9

10/116

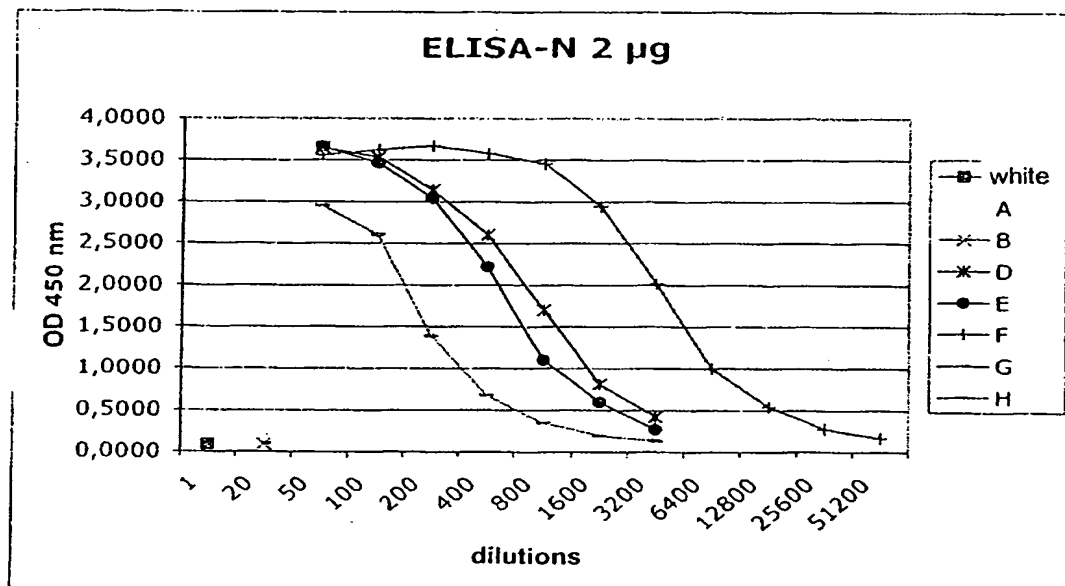
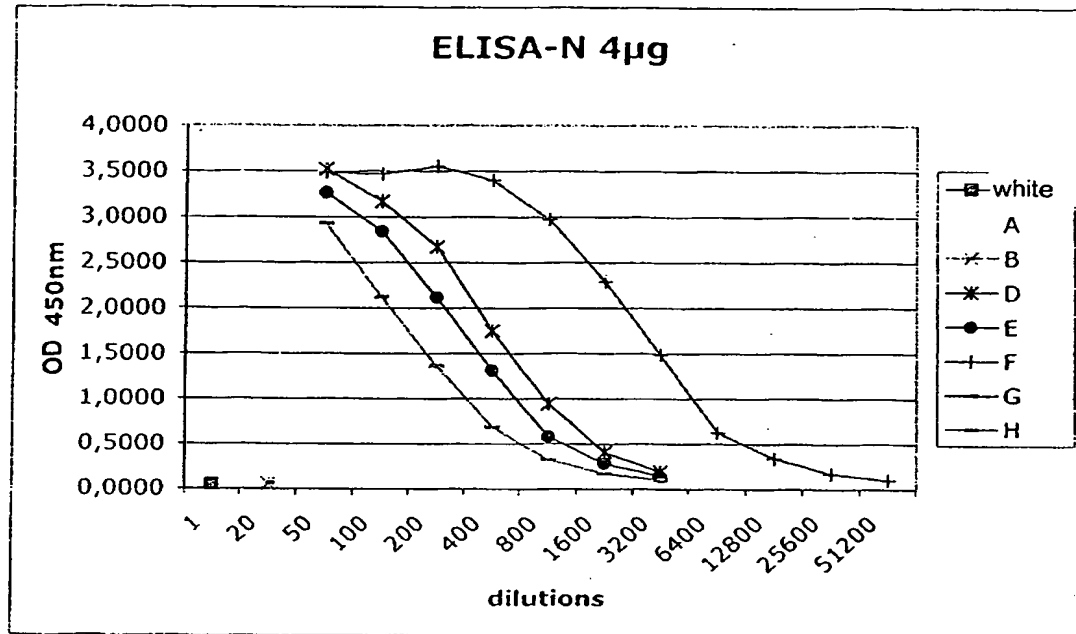


FIGURE 10a

11/116

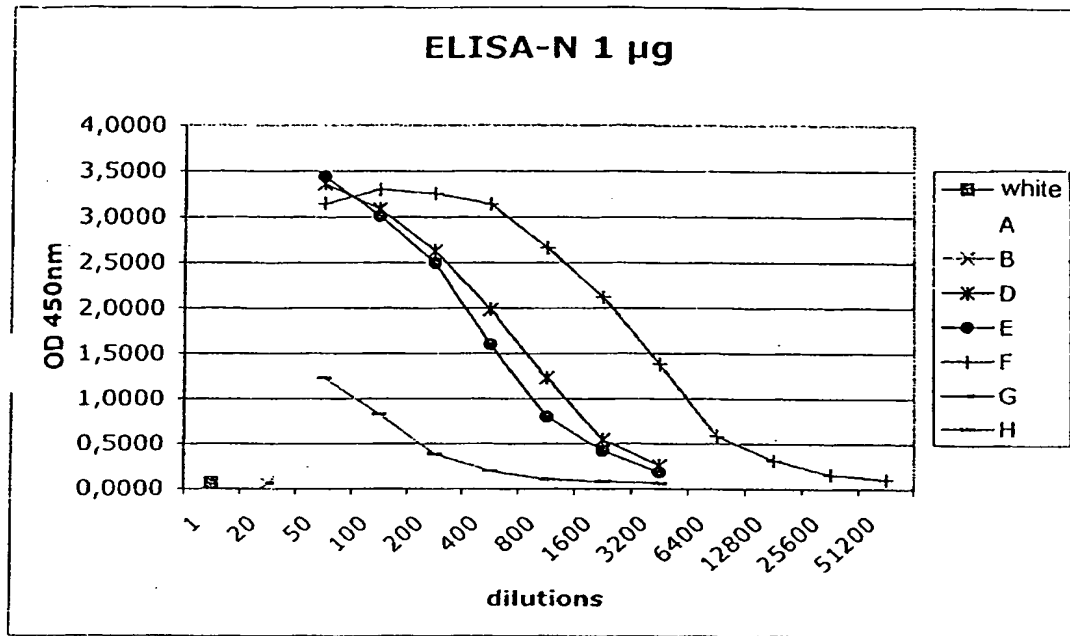


FIGURE 10b

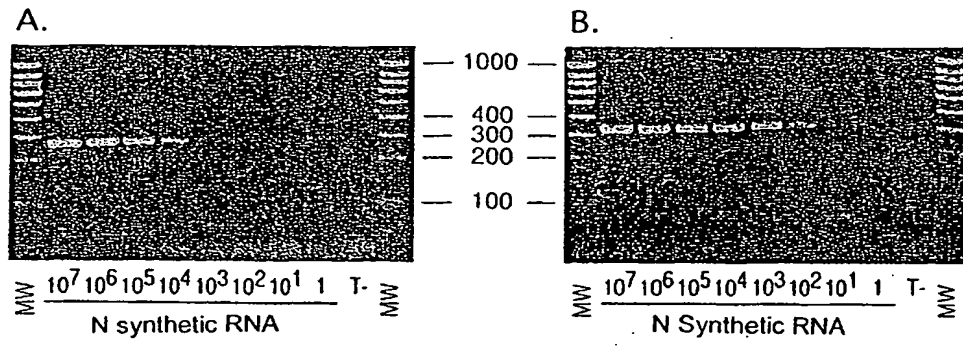


FIGURE 11

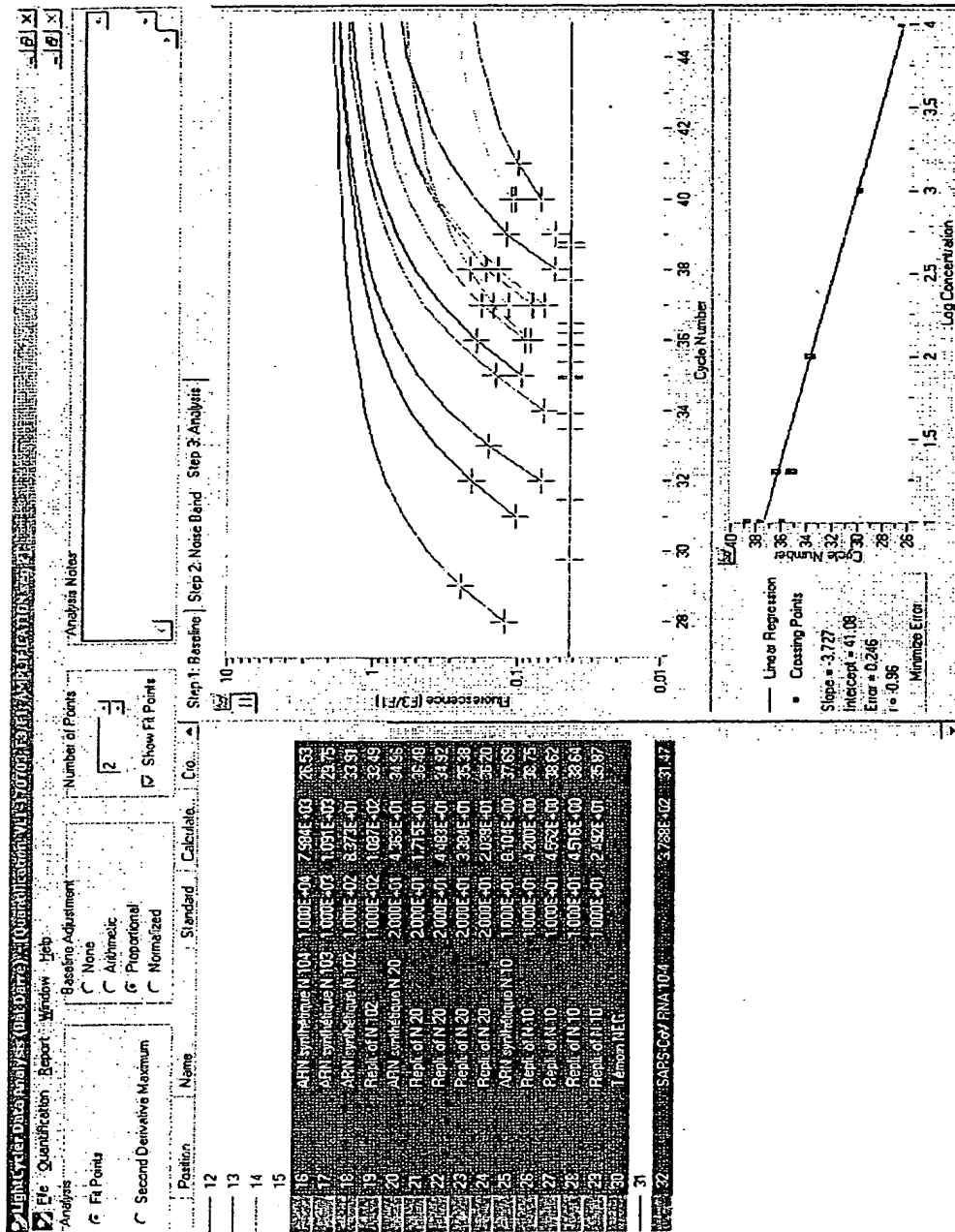


FIGURE 12

14/11 6

```

                                >< XhoII
                                >< Sau3AI
                                > < TthHB8I
                                >< NdeII
                                > < TaqI
                                >< MflI
                                >< Sau3AI
                                >< MboI
                                >< NdeII
                                >< DpnII
                                >< MboI>< MnlI>< DpnI
                                >< DpnII
                                >< BstYI
                                >< DpnI
                                >< BspAI
                                >< BspAI
                                >< Bsp143I
                                >< Bsp143I>< BglII
ATATTAGGTT TTTACCTACC CAGGAAAAGC CAACCAACCT CGATCTCTTG TAGATCTGTT CTCTAAACGA
    10          20          30          40          50          60          70

                                >< VneI
                                >< SphI
                                >< SnaI
                                >< RmaI
                                >< PaeI
                                >< SduI
                                >< NspI
                                >< NspII
                                >< NspHI
                                >< HgiAI
                                >< NlaIII
                                >< Bsp1286I
                                >< MaeI
                                >< BmyI
                                >< ApaLI
                                >< Alw44I
                                >< Alw21I
                                >< SfcI
                                >< PstI
                                >< MnlI
                                >< Ksp632I
                                >< EarI
                                >< Eam1104I
                                >< HindII
                                > < MboII
                                >< HincII
                                >< MaeIII
                                >< Eam1104I
                                >< TthHB8I
                                >< Styl
                                >< TaqI
                                >< RmaI
                                >< ScrFI
                                >< Sau3AI
                                >< MaeI
                                >< NciI
                                >< NdeII
                                >< EcoT14I
                                >< MspI
                                >< MboI
                                >< Eco130I
                                >< MaeIII
                                >< DpnII
                                >< BssT1I
                                >< HpaII
                                >< DpnI
                                >< BsaJI
                                >< HapII
                                >< BspAI
                                >< BlnI
                                >< DsaV
                                >< Bsp143I
                                >< AvrII
                                >< BcnI
TGCAGTCGAT CATCAGCATA CCTAGGTTTC GTCCGGGTGT GACCGAAAGG TAAGATGGAG AGCCTTGTTT
    220          230          240          250          260          270          280

                                >< RmaI
                                >< Esp3I
                                >< MaeII
                                >< HindII
                                >< MaeII> < Eco57I
                                >< BsmAI
                                >< MaeI
                                >< HincII
                                > < AflIII> < DdeI
                                >< Alw26I
                                >< BsmBI
TTGGTGTCAA CGAGAAAACA CACGTCCAAC TCAGTTTGCC TGTCTTCAG GTTAGAGACG TGCTAGTGCG
    290          300          310          320          330          340          350

```

FIGURE 13.1

15/116

```

>< Sau96I
  >< PssI
    >< Pali
  >< NspIV
    >< MnlI
      >< HaeIII
        >< EcoO109I
          >< DraII>< MboII >< PmlI
            >< MnlI >< Cfr13I >< PmaCI
              >< Ksp632I >< BsuRI > < MaeII
                >< HinfI >< BsiZI>< EcoNI >< Eco72I
                  >< EarI >< BshI >< BslI >< BsaAI
                    >< PleI >< Eam1104I>< AsuI >< BsiYI>< BbrPI >< MnlI
TGGCTTCGGG GACTCTGTGG AAGAGGCCCT ATCGGAGGCA CGTGAACACC TCAAAAATGG CACTTGTGGT
  360          370          380          390          400          410          420

                                >< Tru9I
                                >< SfaNI
                                >< MseI
                                > < MaeII
>< RmaI >< AluI >< RsaI >< Csp6I >< AfaI >< AluI >< BspWI >< MseI
CTAGTAGAGC TGGAAAAAGG CGTACTGCCC CAGCTTGAAC AGCCCTATGT GTTCATTAAA CGTCTGTGATG
  430          440          450          460          470          480          490

                                >< RsaI
                                >< McrI ><
                                >< Csp6I
                                >< BsmI BsiEI ><
                                >< BscCI >< AfaI
                                >< AfaI
>< Tru9I >< GdiII >< RsaI
>< MseI >< EaeI >< McrI ><
>< Esp4I >< BsuRI >< BsmI BsiEI ><
>< AflII >< BshI >< AluI >< BscCI >< AfaI
CCTTAAGCAC CAATCAGGC CACAAGGTCG TTGAGCTGGT TGCAGAAATG GACGGCATTC AGTACGGTCG
  500          510          520          530          540          550          560

                                >< NspI
                                >< ScaI >< NspHI
                                >< RsaI >< NlaIII
                                > < Csp6I >< BslI
                                >< BsrI >< BsiYI
                                >< MboII
                                >< MboII
>< AciI >< AfaI >< AflIII >< MunI >< AciI
TAGCGGTATA AACTGCGGAG TACTCGTGCC ACATGTGGGC GAAACCCCAA TTGCATACCG CAATGTTCTT
  570          580          590          600          610          620          630

                                >< TthHB8I
                                >< TaqI
                                >< Sau3AI
                                >< NdeII
                                >< MboI
                                >< DpnII
                                > < DpnI
                                >< ClaI
                                >< Bsu15I
                                >< BspDI
                                >< BspAI
                                > < Bsp143I
                                >< Bsp106I
                                >< BsiXI MaeIII >
                                >< BscI>< SfaNI DdeI ><
                                >< BaniII BfrI ><
CTTCGTAAGA ACGGTAATAA GGGAGCCGGT GGTCATAGCT ATGGCATCGA TCTAAAGTCT TATGACTTAG
  640          650          660          670          680          690          700

```

FIGURE 13.2

```

>< Sau3AI
>< NdeII
>< MboI
>< HphI
>< DpnII
>< BspAI
>< AlwI>< DpnI
>< AluI >< Bsp143I
>< MboII >< BsrI
>< DdeI
>< NlaIII
>< ApaI
>< Alw44I
GTGACGAGCT TGGCACTGAT CCCATTGAAG ATTATGAACA AACTGGAAC ACTAAGCATG GCAGTGGTGC
710 720 730 740 750 760 770
>< SstI
>< SduI
>< SacI
>< NspII
>< MnlI
>< HgiAI
>< Eco24I
>< Ecl136II
>< Bsp1286I
>< BmyI
>< BanII
>< Alw21I
>< AluI
>< MaeIII
>< AccI
>< TthHB8I
>< TaqI
>< SalI
>< RtrI
>< HindII
>< HincII
>< BsgI
>< AsuI
>< Pali
>< NspIV
>< HaeIII
>< Cfr13I
>< BsuRI
>< BsiZI
>< BshI
>< Sau96I
ACTCCGTGAA CTCACCTCGTG AGCTCAATGG AGGTGCAGTC ACTCGCTATG TCGACAACAA TTTCTGTGGC
780 790 800 810 820 830 840
>< ThaI
>< ThaI
>< MvnI
>< MvnI
>< HinPII
>< Hin6I
>< HhaI
>< CfoI
>< BstUI
>< BstUI
>< Bsp50I
>< Bsp50I
>< AciI
>< AccII
>< AccII
>< RsaI
>< NlaIV
>< KpnI
>< Eco64I
>< Csp6I
>< BscBI
>< BanI
>< Asp718
>< AfaI
>< AccBI
>< Acc65I
>< MnlI
>< SfaNI
>< AccII
>< VneI
>< SnoI
>< SduI
>< NspII
>< HgiAI
>< Bsp1286I
>< BmyI
>< ApaI
>< Alw44I
>< Alw21I
CCAGATGGGT ACCCTCTTGA TTGCATCAAA GATTTTCTCG CACGCGCGGG CAAGTCAATG TGCACCTTTT
850 860 870 880 890 900 910
>< TthHB8I
>< TthHB8I
>< TaqI
>< TaqI
>< MnlI
>< Ksp632I
>< HinfI>< PleI
>< Eam1104I
>< EarI
>< BbvI>< AccI
>< Fnu4HI
>< TthHB8I
>< TaqI
>< SfuI
>< NspV>< Tru9I
>< LspI>< MseI
>< ScrFI
>< HinPII
>< NlaIII
>< NlaIII
>< EcoRII
>< DsaV
CCGAACAACT TGATTACATC GAGTCGAAGA GAGGTGTCTA CTGCTGCCGT GACCATGAGC ATGAAATTGC
920 930 940 950 960 970 980

```

FIGURE 13.3

17/116

```

>< MvaI      >< Hin6I      >< SduI      >< Csp45I
>< Ecl136I    >< HhaI      >< NspII     >< BstBI
>< BstOI      >< HaeII     >< HgiAI     >< Bsp119I
>< BstNI      >< Eco47III   >< Bsp1286I  >< BsiCI
>< BsiLI      >< CfoI      >< BmyI      >< Bpu14I
>< ApyI >< DdeI >< Bsp143II >< AluI   >< Alw21I   >< AsuII
CTGGTTCAC T GAGCGCTCTG ATAAGAGCTA CGAGCACCAG ACACCCTTCG AAATTAAGAG TGCCAAGAAA
    990      1000      1010      1020      1030      1040      1050

                                >< Tru9I
                                >< BsmI
                                >< MseI
                                >< BscCI
                                >< MnlI
TTTGACACTT TCAAAGGGGA ATGCCCAAAG TTTGTGTTTC CTCTTAACTC AAAAGTCAAA GTCATTCAAC
    1060      1070      1080      1090      1100      1110      1120

>< PmlI
>< PmaCI
>< MaeII
>< Eco72I
>< BsaAI
>< BbrPI
>< AflIII      >< MnlI>< DdeI
CACGTGTTGA AAAGAAAAAG ACTGAGGGTT TCATGGGGCG TATACGCTCT GTGTACCCCTG TTGCATCTCC
    1130      1140      1150      1160      1170      1180      1190

>< SfaNI
>< MaeIII      >< AccI
ACAGGAGTGT AACAATATGC ACTTGCTCTAC CTTGATGAAA TGTAATCATT GCGATGAAGT TTCATGGCAG
    1200      1210      1220      1230      1240      1250      1260

                                >< SinI
                                >< Sau96I
                                PssI ><
                                >< Psp5II
                                >< PpuMI
                                >< NspIV
                                >< NspHII
                                >< Eco47I
                                >< DraII
                                >< Cfr13I
                                >< BsiZI
                                >< Bme18I
                                >< AvaII
                                >< AsuI
>< MaeII      EcoO109I >< AflIII >
ACGTGCGACT TTCTGAAAGC CACTTGTGAA CATTGTGGCA CTGAAAATTT AGTTATTGAA GGACCTACTA
    1270      1280      1290      1300      1310      1320      1330

                                Van91I ><
                                SinI ><
                                Sau96I ><
                                PflMI ><
                                NspIV ><
                                NspHII >
                                Eco47I ><
                                Cfr13I ><
                                BslI ><
                                BsiZI ><
                                BsiYI ><
                                Bme18I ><
                                AvaII ><
                                AsuI ><

>< RsaI
>< NspI
>< NlaIV
>< NlaIII
>< NspHI>< KpnI
>< Eco64I
>< Csp6I
>< BscBI
>< Bani
>< Asp718
>< AfaI
>< AccBII

```

FIGURE 13. 4

```

>< Acc65I          >< SfcI          >< NlaIII          AccB7I ><
CATGTGGGTA CCTACCTACT AATGCTGTAG TGAAAATGCC ATGTCCTGCC TGTCAAGACC CAGAGATTGG
1340          1350          1360          1370          1380          1390          1400

                                >< TthHB8I
                                >< TaqI>< MnlI
                                >< HinfI

>< DdeI
ACCTGAGCAT AGTGTTCAG ATTATCACAA CCACTCAAAC ATTGAACTC GACTCCGCAA GGGAGGTAGG
1410          1420          1430          1440          1450          1460          1470

                                >< PleI          >< AciI

>< RmaI
>< MnlI
>< MaeI          >< BbvI          >< Fnu4HI          BscBI ><
ACTAGATGTT TTGGAGGCTG TGTGTTTGCC TATGTTGGCT GCTATAATAA GCGTGCCTAC TGGGTTCCCTC
1480          1490          1500          1510          1520          1530          1540

                                XhoII ><
                                Sau3AI ><
                                NdeII ><
                                MflI ><
                                MboI ><

                                >< MaeIII
                                >< Eco31I          DpnII ><
                                >< Pali          >< HaeIII          >< BsrI          >< MnlI DpnI >
>< RmaI          >< BsuRI          >< BsrI          >< BsmAI          BstYI ><
>< MnlI          >< DdeI          >< BspWI          >< BsaI>< HphI          BspAI ><
>< MaeI          >< BshI>< BglI          >< Alw26I          Bsp143I >
GTGCTAGTGC TGATATTGGC TCAGGCCATA CTGGCATTAC TGGTGACAAT GTGGAGACCT TGAATGAGGA
1550          1560          1570          1580          1590          1600          1610

                                > < Tru9I
                                > < MseI
                                >< MaeII          >< Tru9I
                                >< HpaI          > < MnlI
                                >< HindII          > < Ksp632I
                                >< HinfI >< PleI >< HincII          > < EarI
>< AlwI >< DdeI          >< AflIII          >< MseI          > < Eam1104I
TCTCCTTGAG ATACTGAGTC GTGAACGTGT TAACATTAAC ATTGTTGGCG ATTTTCATTT GAATGAAGAG
1620          1630          1640          1650          1660          1670          1680

                                >< MboII
                                >< BstXI          >< SfaNI          > < HinfI
GTTGCCATCA TTTTGGCATC TTTCTCTGCT TCTACAAGTG CCTTTATTGA CACTATAAAG AGTCTTGATT
1690          1700          1710          1720          1730          1740          1750

                                >< StyI
                                >< MaeIII
                                >< EcoT14I
                                >< PleI          >< Eco130I
                                >< MaeIII          >< BssT1I          BslI ><
                                >< HinfI>< AciI          >< BsaJI          BsiYI ><
ACAAGTCTTT CAAAACCATT GTTGAGTCCT GCGGTAAC TAAGTTACC AAGGGAAAGC CCGTAAAAGG
1760          1770          1780          1790          1800          1810          1820

                                >< Sau3AI          >< Van91I
                                >< NdeII          >< PflMI
                                >< MboI          >< DraIII
                                >< DpnII          >< BslI
                                >< DpnI >< Tru9I          >< BsiYI
>< BspAI >< MseI          >< BbvI          >< MnlI
>< Bsp143I          >< AccB7I          Fnu4HI ><

```

FIGURE 135

19/116

```

TGCTTGGAAC ATTGGACAAC AGAGATCAGT TTAAACACCA CTGTGTGGTT TTCCCTCACA GGCTGCTGGT
 1830      1840      1850      1860      1870      1880      1890

      >< ThaI
      >< SfaNI
      >< MvnI
      >< HinPII
>< HinPII
>< Hin6I
>< Hin6I
      >< HhaI
>< Sau3AI      >< HhaI
>< NdeII      >< CfoI
>< MboI      >< CfoI
>< DpnII      >< BstUI
      >< DpnI      >< BssHII
>< BspAI      >< Bsp50I
      >< Bsp143I      >< AccII
GTTATCAGAT CAATTTTTC GCGCACACTT GATGCAGCAA ACCACTCAAT TCCTGATTTC CAAAGAGCAG
 1900      1910      1920      1930      1940      1950      1960

      >< TthHB8I
      >< StyI
      >< NcoI
      >< HindII
      >< HincII
      >< HinfI
      >< EcoT14I
      >< Eco57I
      >< TaqI>< Eco130I
>< SalI >< DsaI
>< RtrI >< BssT1I
      >< BsaHI
      >< BbiII>< NlaIII
      >< AclI >< HgaI
>< MaeIII
      >< BbvI
      >< MaeII >< AccI>< BsaJI
CTGTCACCAT ACTTGATGGT ATTTCTGAAC AGTCATTACG TCTTGTGCGAC GCCATGGTTT ATACTTCAGA
 1970      1980      1990      2000      2010      2020      2030

      >< RsaI
      >< NdeI      >< Csp6I
      >< BspMI
      >< MaeIII >< BsrI >< AfaI      >< DdeI
CCTGCTCACC AACAGTGTC TATTATGGC ATATGTAAC TGTGGTCTTG TACAACAGAC TTCTCAGTGG
 2040      2050      2060      2070      2080      2090      2100

      >< StuI
      >< PstI
      >< HaeIII
      >< Eco147I
      >< SduI      >< DdeI
      >< NspII      >< BsuRI
      >< Bsp1286I      >< BshI
      >< BmyI      >< AatI      >< MnlI
TTGTCTAATC TTTTGGGCAC TACTGTTGAA AAATCAGGC CTATCTTTGA ATGGATTGAG GCGAAACTTA
 2110      2120      2130      2140      2150      2160      2170

      >< TfiI
      >< HinfI
      >< FokI
      >< SfaNI >< BsgI
GTGCAGGAGT TGAATTTCTC AAGGATGCTT GGGAGATTCT CAAATTTCTC ATTACAGGTG TTTTTCAGAT
 2180      2190      2200      2210      2220      2230      2240

```

FIGURE 13.6

```

Tru9I ><
MseI ><
HpaI >
HindII >
HincII >
>< Eco57I
CGTCAAGGGT CAAATACAGG TTGCTTCAGA TAACATCAAG GATTGTGTAA AATGCTTCAT TGATGTTGTT
2250      2260      2270      2280      2290      2300      2310

>< Sau3AI
>< NdeII
>< MboI
> < MaeIII
>< FbaI
>< DpnII
>< DpnI
>< BspAI
>< Bsp143I
>< TthHB8I
>< TaqI
AACAAGGCAC TCGAAATGTG CATTGATCAA GTCACATATCG CTGGCGCAAA GTTGCGATCA CTCAACTTAG
2320      2330      2340      2350      2360      2370      2380

>< PvuII
>< MaeII
>< Bst1107I
>< BsaAI
>< BbvI
>< HphI
>< DrdI
>< AccI
GTGAAGTCTT CATCGCTCAA AGCAAGGGAC TTTACCGTCA GTGTATACGT GGCAAGGAGC AGCTGCAACT
2390      2400      2410      2420      2430      2440      2450

>< Tru9I
>< NlaIV
>< MseI
>< MnlI
>< Esp4I
>< Eco64I
>< BscBI
>< NlaIII >< BanI
>< AflII
>< BbvI
>< AccBI
>< MaeIII
ACTCATGCCT CTTAAGGCAC CAAAAGAAGT AACCTTTCTT GAAGGTGATT CACATGACAC AGTACTTACC
2460      2470      2480      2490      2500      2510      2520

> < XhoI
>< TthHB8I
>< TthHB8I >< TaqI
> < SlaI
> < Paer7I
> < NspIII
>< HphI >< HinII
> < Eco88I
> < CcrI
>< Esp3I >< BsaHI
> < BcoI
>< BsmAI >< BbiII
> < AvaI >< HgaI
>< TaqI > < Ama87I >< BsmBI
>< Alw26I >< AcyI >< AluI
TCTGAGGAGG TTGTTCTCAA GAACGGTGAA CTCGAAGCAC TCGAGACGCC CGTTGATAGC TTCACAAATG
2530      2540      2550      2560      2570      2580      2590

```

FIGURE 13.7

21/116

```

>> PstI >> NlaIII
>> HaeIII >> MnlI
>> BsuRI >> DdeI >> Tru9I
>> BshI >> BfrI >> MseI
GAGCTATCGT TGGCACACCA GTCTGTGTAA ATGGCCTCAT GCTCTTAGAG ATTAAGGACA AAGAACAATA
2600 2610 2620 2630 2640 2650 2660

>> VneI
Tru9I >>
>> SnaI
>> SduI
>> NspII
MseI >>
>> HgiAI
Bsp1286I >> BslI >>
BsiYI >>
>> BmyI
>> ApaLI
>> Tru9I >> Alw44I
>> MseI >> Alw21I
CTGCGCATTG TCTCCTGGTT TACTGGCTAC AAACAATGTC TTTTCGCTTAA AAGGGGGTGC ACCAATTAAA
2670 2680 2690 2700 2710 2720 2730

>> MaeIII >> MboII >> MaeIII >> HinfI AluI >>
GGTGTAACCT TTGGAGAAGA TACTGTTTGG GAAGTTCAAG GTTACAAGAA TGTGAGAATC ACATTTGAGC
2740 2750 2760 2770 2780 2790 2800

>> RsaI
>> NlaIV
MaeIII >>
>> MspI >> KpnI
>> HpaII
>> HapII
>> Eco64I
>> SduI
>> NspII >> TfiI >> BscBI
>> HgiAI >> BanI
>> Bsp1286I >> Asp718
>> BmyI >> HinfI >> AfaI
>> Alw21I >> AccB1I
>> AccI >> Acc65I
TTGATGAACG TGTGACAAA GTGCTTAATG AAAAGTGCTC TGTCTACACT GTTGAATCCG GTACCGAAGT
2810 2820 2830 2840 2850 2860 2870

>> Sau3AI
>> NdeII
>> MboI
>> DpnII
>> DpnI
>> NspI
>> NspHI
>> NlaIII
>> MboII >> BspAI
>> BsrI >> Bsp143I
>> DdeI >> MnlI >> AlwNI >> BbsI >> AlwNI
TACTGAGTTT GCATGTGTTG TAGCAGAGGC TGTTGTGAAG ACTTTACAAC CAGTTTCTGA TCTCCTTACC
2880 2890 2900 2910 2920 2930 2940

>> Sau3AI
>> NdeII
>> MboI
>> DpnII
>> DpnI
>> BspAI

```

FIGURE 13.8

22/11 6

```

>< NlaIII>< Bsp143I          >< AluI          >< SfaNI
AACATGGGTA TTGATCTTGA TGAGTGGAGT GTAGCTACAT TCTACTTATT TGATGATGCT GGTGAAGAAA
  2950      2960      2970      2980      2990      3000      3010

                                >< SfaNI
                                >< MnlI
                                >< Ksp632I          >< MnlI
                                >< EarI          >< MboII
>< MboII          >< GsuI
  >< BsaAI          >< MnlI          >< Eam1104I          >< MboII
>< HphI          >< MaeII>< BpmI          >< MnlI          >< MboII
ACTTTTCATC ACGTATGTAT TGTTCCTTTT ACCCTCCAGA TGAGGAAGAA GAGGACGATG CAGAGTGTGA
  3020      3030      3040      3050      3060      3070      3080

                                >< RsaI
                                >< RsaI
                                >< NlaIII
                                >< MnlI          >< FokI
                                >< Csp6I          Eco31I ><
                                >< Csp6I          >< MamI BsmAI ><
                                >< MboII          >< AfaI          >< BsiBI BsaI ><
                                >< MboII          >< AfaI          >< BsaB1Alw26I ><
GGAAGAAGAA ATTGATGAAA CCTGTGAACA TGAGTACGGT ACAGAGGATG ATTATCAAGG TCTCCCTCTG
  3090      3100      3110      3120      3130      3140      3150

>< NlaIV>< PvuII>< XmnI
>< Eco64I >< Psp5I          >< TthHB8I
>< MnlI >< DdeI          >< TaqI          >< MnlI          >< MboII
>< BscBI>< NspBII >< MnlI          >< Ksp632I          >< MboII >< MboII
>< BanI          >< MnlI          >< EarI          >< BsrI
>< AccBII >< AluI >< Asp700I          >< Eam1104I >< MboII>< BbsI
GAATTTGGTG CCTCAGCTGA AACAGTTCGA GTTGAGGAAG AAGAAGAGGA AGACTGGCTG GATGATACTA
  3160      3170      3180      3190      3200      3210      3220

                                >< Tru9I
                                >< MseI          >< Eco57I
>< FokI          >< BsrI>< MboII BsrI ><
>< DdeI          CTGAGCAATC AGAGATTGAG CCAGAACCAG AACCTACACC TGAAGAACCA GTTAATCAGT TTACTGGTTA
  3230      3240      3250      3260      3270      3280      3290

>< Tru9I          >< MnlI
>< MseI          >< Tru9I >< HindII>< Tru9I          >< DraIII
>< DraI          >< MseI >< HincII>< MseI          >< BspWI
TTTAAAACTT ACTGACAATG TTGCCATTAA ATGTGTTGAC ATCGTTAAGG AGGCACAAAG TGCTAATCCT
  3300      3310      3320      3330      3340      3350      3360

                                >< VneI
                                >< SnoI
                                >< SduI
                                >< NspII
                                >< HgiAI
                                >< Bsp1286I
                                >< BmyI
                                >< ApaLI
                                >< Alw44I
>< BbvI          >< HphI          >< NlaIII          >< Alw21I
>< Fnu4HI          >< BspMI
ATGGTGATTG TAAATGCTGC TAACATACAC CTGAAACATG GTGGTGGTGT AGCAGGTGCA CTCAACAAGG
  3370      3380      3390      3400      3410      3420      3430

                                >< Sau96I
                                >< Pali
                                >< NspIV
                                >< HaeIII
                                >< Cfr13I
>< NlaIV

```

FIGURE 13.9

```

>< Eco64I
>< BscBI
>< BstI
>< AccB1I>< NlaIII
CAACCAATGG TGCCATGCAA AAGGAGAGTG ATGATTACAT TAAGCTAAAT GGCCCTCTTA CAGTAGGAGG
3440 3450 3460 3470 3480 3490 3500

>< BsuRI
>< Tru9I
>< MseI
>< AluI >< AsuI >< MnlI
>< SinI
>< Sau96I
>< NspIV
>< NspHI>< NspHII
>< Eco47I
>< CfrI3I
>< NlaIII >< BspMI
>< Bsi2I
>< Bme18I
>< AvaII MnlI ><
GTCTTGTGTTG CTTTCTGGAC ATAATCTTGC TAAGAAGTGT CTGCATGTG TTGGACCTAA CCTAAATGCA
3510 3520 3530 3540 3550 3560 3570

>< Tru9I
>< HphI> < MseI
>< Esp4I
>< AluI >< NdeI
>< AflIII>< Fnu4HI >< BbvI
GGTGAGGACA TCCAGCTTCT TAAGGCAGCA TATGAAAATT TCAATTCACA GGACATCTTA CTTGCACCAT
3580 3590 3600 3610 3620 3630 3640

RsaI ><
Csp6I ><
AfaI ><
>< Eco57I
>< BcgI
TGTGTCAGC AGGCATATTT GGTGCTAAAC CACTTCAGTC TTTACAAGTG TGCGTGCAGA CGGTTCGTAC
3650 3660 3670 3680 3690 3700 3710

>< BsgI
>< BcgI/a
>< BspMI
>< AluI
>< NlaIII
ACAGGTTTAT ATTGCAGTCA ATGACAAAGC TCTTTATGAG CAGGTTGTCA TGGATTATCT TGATAACCTG
3720 3730 3740 3750 3760 3770 3780

>< MnlI
>< RmaI
>< MaeI
>< Eco57I
>< BscBI
>< TfiI >< MboII
>< HinfI >< DdeI
AAGCCTAGAG TGGAAGCACC TAAACAAGAG GAGCCACCAA ACACAGAAGA TTCCAAACT GAGGAGAAAT
3790 3800 3810 3820 3830 3840 3850

>< Tru9I
>< StuI
>< PstI
>< MseI >< MnlI >< MaeIII
>< HaeIII >< EcoO65I
>< Eco147I >< Eco91I
>< BsuRI >< BstXI ><
>< RsaI
>< Csp6I
>< AfaI
>< TthHB8I
>< TaqI
>< BshI >< BstPI
>< AatI >< BstEII
CTGTCGTACA GAAGCCTGTC GATGTGAAGC CAAAAATTAA GGCCTGCATT GATGAGGTTA CCACAACACT
3860 3870 3880 3890 3900 3910 3920

TfiI ><
NlaIII ><
HinfI ><
>< DdeI
>< EcoRV >< HindIII

```

FIGURE 13.10

```

>< BsrI      >< MboII      >< MaeIII      >< Eco32I      >< AluI
GGAAGAACT  AAGTTTCTTA  CCAATAAGTT  ACTCTTGTTT  GCTGATATCA  ATGGTAAGCT  TTACCATGAT
3930      3940      3950      3960      3970      3980      3990

      >< NspI
      >< NspHI
      >< NlaIII
      >< MnlI      >< SfaNI
      >< EcoNI
      >< DdeI      >< MboII >< BslI      >< NlaIII
>< DdeI      >< BfrI      >< HphI      >< BsiYI      >< FokI
TCTCAGAACA  TGCTTAGAGG  TGAAGATATG  TCTTTCCTTG  AGAAGGATGC  ACCTTACATG  GTAGGTGATG
4000      4010      4020      4030      4040      4050      4060

      >< SpeI
      >< RmaI
      >< MaeI      >< EcoRV>< HphI      >< SfaNI
      >< HphI      >< Eco32I      >< MnlI      >< DdeI
TTATCACTAG  TGGTGATATC  ACTTGTGTTG  TAATACCCTC  CAAAAGGCT  GGTGGCACTA  CTGAGATGCT
4070      4080      4090      4100      4110      4120      4130

      >< ScrFI
      >< RsaI
      >< MvaI
      >< EcoRII
      >< Ecl136I
      >< DsaV
      >< Csp6I >< EcoNI
      >< BstOI
      >< BstNI
      >< BsiLI
      >< BsaJI
      >< BsaAI      >< BslI
      >< MaeII>< ApyI
      >< AfaI      >< BsiYI
CTCAAGAGCT  TTGAAGAAAG  TGCCAGTTGA  TGAGTATATA  ACCACGTACC  CTGGACAAGG  ATGTGCTGGT
4140      4150      4160      4170      4180      4190      4200

      >< Tru9I
      >< MseI
      >< DdeI      >< Esp4I      >< RsaI
      >< MnlI      >< BspWI      >< Csp6I
      >< FokI      >< AluI      >< AflII      >< Eco57I >< AfaI
TATACACTTG  AGGAAGCTAA  GACTGCTCTT  AAGAAATGCA  AATCTGCATT  TTATGTACTA  CCTTCAGAAG
4210      4220      4230      4240      4250      4260      4270

      >< ScrFI
      >< MvaI
      >< EcoRII
      >< Ecl136I
      >< XmnI      >< RmaI      >< DsaV      NlaIII ><
      >< Ksp632I      >< TfiI>< MboII      >< BstOI      Ksp632I ><
      >< EarI      >< Eam1104I      >< MaeI      >< BstNI      >< EarI
      >< DdeI      >< HinfI      >< BsiLI      Eam1104I ><
      >< BspWI      >< Asp700I      >< ApyI      BsmAI ><
      CACCTAATGC  TAAGGAAGAG  ATTCTAGGAA  CTGTATCCTG  GAATTTGAGA  GAAATGCTTG  CTCATGCTGA
4280      4290      4300      4310      4320      4330      4340

      >< VspI      >< Zsp2I
      >< Tru9I      >< Ppu10I
      >< MseI      >< NsiI
      >< MboII      >< NlaIII      >< FokI
      >< Eco57I      >< Mph1103I      >< FokI

```

FIGURE 13. 11


```

                >< AsnI          >< EcoT22I          >< BspWI
                >< AseI          >< AvaIII           >< BglI           >< MaeII
AGAGACAAGA AAATTAATGC CTATATGCAT GGATGTTAGA GCCATAATGG CAACCATCCA ACGTAAGTAT
4350         4360         4370         4380         4390         4400         4410

                >< SfaNI
                >< Tru9I          >< HindII          >< TfiI           >< SpeI
                >< MseI          >< HincII>< MboII        >< RmaI
                >< MnlI          >< DrdI >< HinfI        >< MaeI
AAAGGAATTA AAATTCAAGA GGGCATCGTT GACTATGGTG TCCGATTCTT CTTTATACT AGTAAAGAGC
4420         4430         4440         4450         4460         4470         4480

                >< MaeIII
>< SfcI          >< Fnu4HI          >< MunI
>< AluI          >< AluI          >< AclI          >< MaeIII ><
CTGTAGCTTC TATTATTACG AAGCTGAACT CTCTAAATGA GCCGCTTGTC ACAATGCCAA TTGGTTATGT
4490         4500         4510         4520         4530         4540         4550

                >< Thai
                >< MvnI
                >< MboII
                >< HinfI
>< HinPII
>< Hin6I
>< Hin6I
>< HhaI
>< HhaI
>< Tru9I
>< NlaIII        >< Fnu4HI
>< MseI          >< CfoI
>< MnlI          >< CfoI
>< Ksp632I       >< BstUI
>< EarI          >< BssHII>< BspWI    >< Tru9I
>< Eam1104I      >< Bsp50I          >< MseI
>< BbvI          >< AccII          >< AluI          HphI ><
GACACATGGT TTTAATCTTG AAGAGGCTGC GCGCTGTATG CGTTCTCTTA AAGCTCCTGC CGTAGTGTCA
4560         4570         4580         4590         4600         4610         4620

                >< MaeIII
>< SfaNI          >< AlwNI          >< MnlI >< MnlI>< DdeI
GTATCATCAC CAGATGCTGT TACTACATAT AATGGATACC TCACTTCGTC ATCAAAGACA TCTGAGGAGC
4630         4640         4650         4660         4670         4680         4690

                >< SinI
                >< Sau96I
                >< NspIV
                >< NspHII
>< SduI          >< Eco47I
>< NspII         >< Cfr13I
>< HgiAI         >< BsiZI
>< Bsp1286I      >< Bme18I          >< RsaI
>< BmyI          >< AvaII          >< Csp6I
>< Alw21I        >< AsuI           >< AfaI
ACTTTGTAGA AACAGTTTCT TTGGCTGGCT CTTACAGAGA TTGGTCCTAT TCAGGACAGC GTACAGAGTT
4700         4710         4720         4730         4740         4750         4760

                >< TthHB8I
                >< TaqI
                >< SduI
                >< NspII
                >< Van91I
                >< RsaI >< PflMI
                >< HphI >< BslI
                >< Csp6I >< BsiYI
                >< BmyI >< GsuI ><

>< Tru9I
>< MseI
>< Esp4I

```

FIGURE 13.12

26/116

```

                >< AflIII >< MaeIII                >< AfaI >< AccB7I >< BanIIBpmI ><
AGGTGTTGAA TTTCTTAAGC GTGGTGACAA AATTGTGTAC CACACTCTGG AGAGCCCCGT CGAGTTTCAT
  4770          4780          4790          4800          4810          4820          4830

                                >< Tru9I
                                >< PleI >< EcoNI
                                >< MnlI >< BslI
                                >< BsmAI >< BsiYI
    >< MnlI                >< HphI                >< HinfI>< Alw26I>< AciI >< MseI
CTTGACGGTG AGGTTCTTTC ACTTGACAAA CTAAAGAGTC TCTTATCCCT GCGGGAGGTT AAGACTATAA
  4840          4850          4860          4870          4880          4890          4900

                                >< AluI                >< NdeI
AAGTGTTTAC AACTGTGGAC AACACTAATC TCCACACACA GCTTGTGGAT ATGTCTATGA CATATGGACA
  4910          4920          4930          4940          4950          4960          4970

    >< SinI
    >< Sau96I
    >< NspIV
    >< NspHII
    >< Eco47I
    >< Cfr13I
    >< BsiZI
    >< Bme18I
    >< AvaII
    >< AsuI
                                >< MaeIII >< Tru9I >< MnlI
                                >< FokI >< MseI >< BspHI
GCAGTTTGGT CCAACATACT TGGATGGTGC TGATGTTACA AAAATTAAAC CTCATGTAA TCATGAGGGT
  4980          4990          5000          5010          5020          5030          5040

                                > < TthHB8I
                                > < TaqI
    >< RsaI
    > < RmaI
    > < MaeI
    >< Csp6I
    >< AfaI
                                >< SnaBI
                                >< MaeII >< HindIII >< RsaI
                                >< Eco105I >< Csp6I
                                >< BsaAI >< AluI >< AfaI
AAGACTTTCT TTGTACTACC TAGTGATGAC ACACTACGTA GTGAAGCTTT CGAGTACTAC CATACTCTTG
  5050          5060          5070          5080          5090          5100          5110

    >< RsaI
    >< NspI
    >< NspHI
    >< NlaIII
    > < Csp6I >< Tru9I
    >< AflIII >< MseI
    >< AfaI >< DraI
                                MnlI >
                                BslI ><
                                BsiYI ><
ATGAGAGTTT TCTTGGTAGG TACATGTCTG CTTTAAACCA CACAAAGAAA TGGAAATTTC CTCAAGTTGG
  5120          5130          5140          5150          5160          5170          5180

    >< Tru9I >< Tru9I
    >< MseI >< MseI
    >< MunI
    >< RmaI
    >< MaeI
                                AluI >
TGGTTTAACT TCAATTAAAT GGGCTGATAA CAATTGTTAT TTGTCTAGTG TTTTATTAGC ACTTCAACAG
  5190          5200          5210          5220          5230          5240          5250

                                >< SfaNI
                                >< SduI
                                >< NspII
                                >< Eco24I
                                >< Bsp1286I
                                >< BmyI
                                >< BbvI Fnu4HI ><
                                >< BanII >< BspWI
                                HphI >

    >< MnlI

```

FIGURE 13.13

```

CTTGAAGTCA AATTCAATGC ACCAGCACTT CAAGAGGCTT ATTATAGAGC CCGTGCTGGT GATGCTGCTA
  5260      5270      5280      5290      5300      5310      5320

<< VneI
<< SnoI
    << SduI
    << NspII
    << HgiAI
    << Bsp1286I
    << BmyI
<< ApaLI
<< Alw44I
    << Alw21I
    << AluI
    MboII <<
    << HphI
ACTTTTGTGC ACTCATACTC GCTTACAGTA ATAAACTGT TGGCGAGCTT GGTGATGTCA GAGAACTAT
  5330      5340      5350      5360      5370      5380      5390

    < < SphI
    < < PaeI
    < < NspI
    < < NspHI << TfiI
    << SfcI < < NlaIII << HinfI
    << Tru9I
    << MseI
GACCCATCTT CTACAGCATG CTAATTTGGA ATCTGCAAAG CGAGTTCTTA ATGTGGTGTG TAAACATTGT
  5400      5410      5420      5430      5440      5450      5460

    << Tru9I
    << MseI
    << AluI
    << RsaI
    < < Csp6I
    Esp4I >
    << AfaI
    AflII >
GGTCAGAAAA CTACTACCTT AACGGGTGTA GAAGCTGTGA TGTATATGGG TACTCTATCT TATGATAATC
  5470      5480      5490      5500      5510      5520      5530

    << RsaI
    << MboII
    << RmaI HinfI <<
    << Csp6I
    << MaeI << BbsI
    << AfaI
<< Tru9I
    << SfaNI
    << MseI
    << NlaIII
TTAAGACAGG TGTTTCCATT CCATGTGTGT GTGGTCGTGA TGCTACACAA TATCTAGTAC AACAAGAGTC
  5540      5550      5560      5570      5580      5590      5600

    << RsaI
    << Csp6I
    << PaeI
    << BsgI
    << DdeI
    << BspWI << BspMI
    << AfaI
TTCTTTTGTG ATGATGTCTG CACCACCTGC TGAGTATAAA TTACAGCAAG GTACATTCTT ATGTGCGAAT
  5610      5620      5630      5640      5650      5660      5670

    << RsaI
    << DdeI
    << BsmAI
    << Csp6I
    << BsaI
    << MaeIII
    << AfaI
    << BsrI
    << Alw26I
    MnlI <<
    << HphI >
GAGTACACTG GTAACATCA GTGTGGTCAT TACACTCATA TAACGTCTAA GGAGACCCCTC TATCGTATTG
  5680      5690      5700      5710      5720      5730      5740

    << SstI
    << SduI
    << SacI
    << NspII
    << HgiAI
    << Eco24I
    << Eco47I
    << Cfr13I
    << BsiZI
    << Bme18I
    << SinI
    << Sau96I
    << NspIV
    << NspHII
    < < RsaI
    << MaeIII
    << Eco47I
    << Cfr13I
    << BsiZI
    << Bme18I

```

FIGURE 13. 14

28/116

```

    >< BanII
    >< Alw21I
    >< AluI
ACGGAGCTCA CCTTACAAAG ATGTCAGAGT ACAAAGGACC AGTGACTGAT GTTTTCTACA AGGAAACATC
5750          5760          5770          5780          5790          5800          5810

    >< TthHB8I
    >< TaqI >< MaeIII
TTACTACTACA ACCATCAAGC CTGTGTCGTA TAAACTCGAT GGAGTTACTT ACACAGAGAT TGAACCAAAA
5820          5830          5840          5850          5860          5870          5880

    >< RsaI
    >< Csp6I
    >< SfcI >< BbvI
    >< Fnu4HI
    >< AfaI
TTGGATGGGT ATTATAAAAA GGATAATGCT TACTATACAG AGCAGCCTAT AGACCTTGTA CCAACTCAAC
5890          5900          5910          5920          5930          5940          5950

    Tru9I ><
    SwaI ><
    MseI ><
    > < NspI
    > < NspHI
    > < NlaIII
    >< AflIII
    >< BsaBI ><
CATTACCAAA TGCGAGTTTT GATAATTTCA AACTCACATG TTCTAACACA AAATTTGCTG ATGATTTAAA
5960          5970          5980          5990          6000          6010          6020

    >< MboII
    >< AluI >< AluI >< MaeIII
TCAAATGACA GGCTTCACAA AGCCAGCTTC ACGAGAGCTA TCTGTCACAT TCTTCCCAGA CTTGAATGGC
6030          6040          6050          6060          6070          6080          6090

    >< SfcI
GATGTAGTGG CTATTGACTA TAGACACTAT TCAGCGAGTT TCAAGAAAGG TGCTAAATTA CTGCATAAGC
6100          6110          6120          6130          6140          6150          6160

    >< Tru9I
    >< ScrFI
    >< MvaI
    >< MseI
    >< EcoRII
    >< Ecl136I
    >< DsaV
    >< BstOI
    >< BstNI
    >< BsiLI
    >< ApyI
    >< MaeII
    >< BstXI
    >< DraIII
    >< BstXI
CAATTGTTTG GCACATTAAC CAGGCTACAA CCAAGACAAC GTTCAAACCA AACACTTGGT GTTTACGTTG
6170          6180          6190          6200          6210          6220          6230

    > < RsaI
    >< Csp6I
    > < AfaI >< BsrI
    >< BbsI
TCTTTGGAGT ACAAAGCCAG TAGATACTTC AAATTCATTT GAAGTTCTGG CAGTAGAAGA CACACAAGGA
6240          6250          6260          6270          6280          6290          6300

    >< HindII
    >< HincII
    >< MnlI
    >< Eco57I
ATGGACAATC TTGCTTGTGA AAGTCAACAA CCCACCTCTG AAGAAGTAGT GGAAAATCCT ACCATACAGA
6310          6320          6330          6340          6350          6360          6370

```

FIGURE 13.15

29/116

```

    >< MaeIII
    >< MaeII
AGGAAGTCAT AGAGTGTGAC GTGAAAAC TA CCGAAGTTGT AGGCAATGTC ATACTTAAAC CATCAGATGA
6380      6390      6400      6410      6420      6430      6440

    >< XhoII
    >< Sau3AI
    >< NlaIII
    >< NdeII
    >< MflI
    >< MboI
    >< DpnII
    >< DpnI
    >< BstYI
    >< BspAI
    >< Tru9I
    >< MseI
    >< BspHI >< Bsp143I>< Fnu4HI
    >< MaeIII >< MnlI >< BbvI >< AlwI
AGGTGTTAAA GTAACACAAG AGTTAGGTCA TGAGGATCTT ATGGCTGCTT ATGTGGAAAA CACAAGCATT
6450      6460      6470      6480      6490      6500      6510

    >< SauI
    >< RmaI
    >< MstII
    >< MaeI
    >< Eco81I
    >< DdeI
    >< CvnI
    >< Bsu36I
    >< Bse21I
    >< BfrI> < Tru9I
    >< AxyI> < MseI>< MunI >< NlaIII
    >< MseI >< AluI >< AocI >< DraI >< BbvI Fnu4HI ><
ACCATTAAGA AACCTAATGA GCTTTCAC TA GCCTTAGGTT TAAAAACAAT TGCCACTCAT GGTATTGCTG
6520      6530      6540      6550      6560      6570      6580

    >< VspI >< StyI
    >< Tru9I >< EcoT14I
    >< MseI >< Eco130I
    >< AsnI >< BssT1I
    >< AseI >< BsaJI
    >< DdeI
    >< BslI
    >< BsiYI
    >< BfrI >< Fnu4HI
CAATTAATAG TGTTCCTTGG AGTAAAATTT TGGCTTATGT CAAACCATTC TTAGGACAAG CAGCAATTAC
6590      6600      6610      6620      6630      6640      6650

    >< HinP1I
    >< Hin6I
    >< HhaI
    >< DdeI
    >< BbvI >< CfoI
    >< Tru9I
    >< MaeII>< MseI
    >< DraIII
    >< AflIII
AACATCAAAT TGCCTAAGA GATTAGCACA ACGTGTGTTT AACAATTATA TGCCTTATGT GTTTACATTA
6660      6670      6680      6690      6700      6710      6720

    >< RsaI >< RsaI>< XbaI
    >< Csp6I >< Csp6I >< RmaI
    >< MunI >< AfaI >< AfaI >< MaeI >< AluI
TTGTTCCAAT TGTGTACTTT TACTAAAAGT ACCAATTCTA GAATTAGAGC TTCACTACCT ACAACTATTG
6730      6740      6750      6760      6770      6780      6790

    >< VspI
    >< Tru9I
    >< NaeI
    >< MspI
    >< MseI

```

FIGURE 13. 16

```

                                >< HpaII
                                >< HapII
                                >< Cfr10I >< FokI
                                >< AsnI
                                >< AseI>< HphI>< MaeIII
CTAAAAATAG TGTAAAGAGT GTTGCTAAAT TATGTTTGGA TGCCGGCATT AATTATGTGA AGTCACCCAA
6800          6810          6820          6830          6840          6850          6860

                                >< Tru9I          >< DdeI          MaeIII >
                                >< MseI          >< BfrI          >< BbvI
ATTTTCTAAA TTGTTACAA TCGCTATGTG GCTATTGTTG TTAAGTATTT GCTTAGGTTT TCTAATCTGT
6870          6880          6890          6900          6910          6920          6930

                                >< SduI
                                >< NspII
                                >< HgiAI
                                >< Bsp1286I
                                >< BmyI
                                >< Alw21I
GTAAGTCTG CTTTGGTGT ACTCTTATCT AATTTTGGTG CTCCTTCTTA TTGTAATGGC GTTAGAGAAT
6940          6950          6960          6970          6980          6990          7000

                                Tru9I ><
                                MseI ><
                                >< Fnu4HI
                                BbvI >
>< Tru9I          > < MaeIII
>< MseI          >< MaeII
TGTATCTTAA TTCGTCTAAC GTTACTACTA TGGATTCTG TGAAGGTTCT TTTCCTTGCA GCATTTGTTT
7010          7020          7030          7040          7050          7060          7070

                                > < TfiI
                                >< MamI
                                > < HinfI
                                >< BsiBI
                                >< XmnI>< MaeIII
                                >< PleI>< HinfI
                                >< BsaBI >< AluI
                                >< Asp700I
                                >< AfaI ><
AAGTGGATTA GACTCCCTTG ATTCTTATCC AGCTCTTGAA ACCATTTCAGG TGACGATTTC ATCGTACAAG
7080          7090          7100          7110          7120          7130          7140

                                >< Pali
                                >< NspBII
                                >< HaeIII
                                >< GdiII
                                >< Fnu4HI
                                >< EaeI
                                >< DdeI
                                >< BsuRI
                                >< BshI >< BslI
                                >< AciI>< BsiYI
>< RmaI
>< MaeI
CTAGACTTGA CAATTTTAGG TCTGGCCGCT GAGTGGGTTT TGGCATATAT GTTGTTTACA AAATTCTTTT
7150          7160          7170          7180          7190          7200          7210

                                >< BspMI
                                >< AluI
                                >< RmaI
                                >< MaeI
ATTTATTAGG TCTTTCAGCT ATAATGCAGG TGTTCTTTGG CTATTTTGCT AGTCATTTCA TCAGCAATTC
7220          7230          7240          7250          7260          7270          7280

                                RsaI ><
                                >< MboII
                                >< NlaIV
                                >< Eco64I
                                > < RsaI >< BscBI
                                >< Csp6I >< BanI
                                > < AfaI>< AccBI
                                > < NlaIII

```

1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 26

```

TTGGCTCATG TGGTTTATCA TTAGTATTGT ACAAATGGCA CCCGTTTCTG CAATGGTTAG GATGTACATC
  7290      7300      7310      7320      7330      7340      7350

                                TthHB8I ><
                                >< TaqI
                                MnlI ><
                                >< NdeI
                                >< Ksp632I
                                >< EarI
                                >< Eam1104I>< AluI>< MboII >< NlaIII Eam1104I ><
>< FokI
TTCTTTGCTT CTTTCTACTA CATATGGAAG AGCTATGTTT ATATCATGGA TGGTTGCACC TCTTCGACTT
  7360      7370      7380      7390      7400      7410      7420

                                XhoII ><
                                Sau3AI ><
                                NlaIII ><
                                NdeII ><
                                MflI ><
                                MboI ><
                                >< ThaI
                                >< MvnI
                                >< MluI
                                >< BstUI
                                >< Bsp50I >< RsaI
                                >< DpnII ><
                                >< BstYI ><
>< NlaIII >< CfoI >< AflIII >< Csp6I >< Tru9I BspAI ><
>< BspWI >< BspWI >< AccII >< AfaI >< MseI BglII ><
GCATGATGTG CTATAAGCGC AATCGTGCCA CACGCGTTGA GTGTACAACT ATTGTTAATG GCATGAAGAG
  7430      7440      7450      7460      7470      7480      7490

                                >< Pali
                                >< HaeIII
                                >< DsaI
                                >< Muni
>< MboII >< BsuRI
>< DpnI >< BshI
>< Bsp143I >< MnlI >< BsaJI >< PleI>< HinfI >< Muni BsmAI ><
ATCTTTCTAT GTCTATGCAA ATGGAGGCCG TGGCTTCTGC AAGACTCACA ATTGGAATTG TCTCAATTGT
  7500      7510      7520      7530      7540      7550      7560

                                >< RsaI
                                >< Csp6I
                                >< BsrI
                                >< AfaI
                                >< GsuI
                                >< BpmI
                                >< Tru9I ><
                                >< MseI ><
                                >< MaeIII><DraI ><
                                >< BsrI
GACACATTTT GCACTGGTAG TACATTCATT AGTGATGAAG TTGCTCGTGA TTTGTCACTC CAGTTTAAAA
  7570      7580      7590      7600      7610      7620      7630

                                >< ThaI
                                >< MvnI
                                >< HphI
                                >< HinfI
                                >< HinfI
                                >< HinfI
                                >< HhaI ><
                                >< HhaI
                                >< CfoI ><
                                >< CfoI
                                >< BstUI
                                >< BssHII
                                >< Bsp50I ><
                                >< BsrI
                                >< AccII
GACCAATCAA CCCTACTGAC CAGTCATCGT ATATTGTTGA TAGTGTGCT GTGAAAAATG GCGCGCTTCA
  7640      7650      7660      7670      7680      7690      7700

```

FIGURE 13. 18

32/116

```

>< FokI
    >< BsmAI
    >< MnlI    >< Alw26I    >< AciI
CCTCTACTTT GACAAGGCTG GTCAAAAGAC CTATGAGAGA CATCCGCTCT CCCATTTTGT CAATTTAGAC
  7710      7720      7730      7740      7750      7760      7770

    >< VspI
    >< Tru9I
    >< MseI
    >< AsnI
    >< AseI
    >< BcgI/a
AATTTGAGAG CTAACAACAC TAAAGGTTCA CTGCCTATTA ATGTCATAGT TTTTGATGGC AAGTCCAAAT
  7780      7790      7800      7810      7820      7830      7840

    >< SfcI    >< PvuII
    >< RsaI    >< Psp5I
    >< PleI    >< Csp6I    >< NspBII
    >< HinfI   >< DdeI    >< BcgI   >< AfaI    >< AluI
GCGACGAGTC TGCTTCTAAG TCTGCTTCTG TGTACTACAG TCAGCTGATG TGCCAACCTA TTCTGTTGCT
  7850      7860      7870      7880      7890      7900      7910

    TthHB8I ><
    TaqI ><
    SalI ><
    RtrI ><
    HindII >
    HincII >
    >< ScaI
    >< RsaI    >< Tru9I
    >< Csp6I    >< SfaNI >< Eco57I
    >< AluI    >< MaeII   >< AfaI    >< MseI    >< AccI ><
TGACCAAGCT CTTGTATCAG ACGTTGGAGA TAGTACTGAA GTTTCGGTTA AGATGTTTGA TGCTTATGTC
  7920      7930      7940      7950      7960      7970      7980

    >< Tru9I
    >< MseI
    >< Esp4I    >< SfcI
    >< AflIII   >< BspWI   >< AluI
GACACCTTTT CAGCAACTTT TAGTGTTTCT ATGGAAAAAC TTAAGGCACT TGTTGCTACA GCTCACAGCG
  7990      8000      8010      8020      8030      8040      8050

    >< PvuII
    >< Psp5I
    >< NspBII
    >< Fnu4HI
    >< AluI
    >< AluI    >< BbvI    >< AluI
AGTTAGCAAA GGGTGTAGCT TTAGATGGTG TCCTTTTCTAC ATTCGTGTCA GCTGCCCGAC AAGGTGTTGT
  8060      8070      8080      8090      8100      8110      8120

    >< HindII
    >< HincII
    >< BsmAI
    >< FokI >< Alw26I
    >< DdeI
    >< BfrI
    >< MaeIII ><
    >< NdeII
    >< MflI
    >< MboI
    >< NlaIII >< HgaI
    >< HinfI >< DpnII
    >< DpnI ><
TGATACCGAT GTTGACACAA AGGATGTTAT TGAATGTCTC AAACCTTTCAC ATCACTCTGA CTTAGAAGTG
  8130      8140      8150      8160      8170      8180      8190

```

FIGURE 13.19


```

                                Bsp143I ><
                                >< BsaHI >< BstYI
                                >< BbiII >< BspAI
                                >< AcyI >< BglII
                                >< MaeIII>< HphI
                                >< MaeIII >< HphI >< NlaIII
ACAGGTGACA GTTGTAACAA TTTCATGCTC ACCTATAATA AGGTTGAAAA CATGACGCCC AGAGATCTTG
      8200      8210      8220      8230      8240      8250      8260

                                >< NspI
                                >< NspHI
                                >< NlaIII
>< HinPII
>< Hin6I
>< HhaI
>< CfoI
                                >< BspWI >< MaeIII
GCGCATGTAT TGA CTGTAAT GCAAGGCATA TCAATGCCCA AGTAGCAAAA AGTCACAATG TTTCACATCAT
      8270      8280      8290      8300      8310      8320      8330

                                >< NspI
                                >< NspHI
                                >< NlaIII
                                >< PvuII
                                >< Psp5I
                                >< Eam1105I
                                >< NspBII
                                >< BbvI
                                >< Fnu4HI
                                >< AflIII
                                >< AluI >< BbvI >< Fnu4HI
CTGGAATGTA AAAGACTACA TGTCTTTATC TGAACAGCTG CGTAAACAAA TTCGTAGTGC TGCCAAGAAG
      8340      8350      8360      8370      8380      8390      8400

                                >< RmaI
                                >< MaeI >< Eam1105I
AACAACATAC CTTT TAGACT AACTTGTGCT ACAACTAGAC AGGTTGTCAA TGTCATAACT ACTAAAATCT
      8410      8420      8430      8440      8450      8460      8470

                                >< Tru9I
                                >< Pali
                                >< MseI
                                >< HaeIII
                                >< ScaI
                                >< Esp4I
                                >< RsaI >< Tru9I
                                >< BsuRI
                                >< Csp6I >< MseI
                                >< BshI
                                >< AfaI >< DraI
                                >< AflIII
                                >< BbvI
CACTCAAGGG TGGTAAGATT GTTAGTACTT GTTTAAACT TATGCTTAAG GCCACATTAT TGTGCGTTCT
      8480      8490      8500      8510      8520      8530      8540

                                >< RsaI
                                >< Csp6I
                                >< BsrI
                                >< AfaI
                                >< NlaIII
                                >< MaeIII
TGCTGCATTG GTTTGTTATA TCGTTATGCC AGTACATACA TTGTCAATCC ATGATGGTTA CACAAATGAA
      8550      8560      8570      8580      8590      8600      8610

                                >< MaeIII
                                >< MaeIII
                                >< FokI
ATCATTTGGTT ACAAAGCCAT TCAGGATGGT GTCAC TCGTG ACATCATTTT TACTGATGAT TGT TTTGCAA
      8620      8630      8640      8650      8660      8670      8680

                                >< NspI
                                >< NspHI
                                >< NlaIII
                                >< HgaI
                                >< BstXI
                                >< BbvI
                                >< AluI
ATAAACATGC TGGTTTTGAC GCATGGTTTA GCCAGCGTGG TGGTTCATAC AAAAATGACA AAAGCTGCCC
      8690      8700      8710      8720      8730      8740      8750

```

FIGURE 13. 20

```

                                >< ScrFI
                                >< ScrFI >< RsaI
                                >< MvaI >< MspI
                                >< EcoRII >< HpaII
                                >< Ecl136I>< NciI
                                >< DsaV >< HapII
                                >< BstOI>< DsaV
                                >< BstNI >< Csp6I
                                >< BsiLI >< BcnIDdeI ><
                                >< ApyI >< AfaI
                                >< Fnu4HI
                                >< AluI
TGTAGTAGCT GCTATCATTA CAAGAGAGAT TGGTTTCATA GTGCCTGGCT TACCGGGTAC TGTGCTGAGA
8760      8770      8780      8790      8800      8810      8820

> < MaeIII >< HphI >< MnlI >< BspWI
GCAATCAATG GTGACTTCTT GCATTTTCTA CCTCGTGTTT TTAGTGCTGT TGGCAACATT TGCTACACAC
8830      8840      8850      8860      8870      8880      8890

                                Tru9I >
                                SfaNI ><
                                >< RsaI
                                MseI >
                                >< BspWI >< Fnu4HI >< Csp6I
                                >< BbvI>< MnlI >< DdeI >< AfaI
CTTCCAAACT CATTGAGTAT AGTGATTTTG CTACCTCTGC TTGCGTCTT GCTGCTGAGT GTACAATTTT
8900      8910      8920      8930      8940      8950      8960

                                > < RmaI
                                >< MnlI
                                > < MaeI
TAAGGATGCT ATGGGCAAAC CTGTGCCATA TTGTTATGAC ACTAATTTGC TAGAGGGTTC TATTTCTTAT
8970      8980      8990      9000      9010      9020      9030

                                ScrFI >
                                MvaI >
                                MnlI ><
                                EcoRII ><
                                Ecl136I >
                                DsaV ><
                                BstOI >
                                BstNI >
                                BsiLI >
                                >< FokI
                                >< BscBI
                                ApyI >
                                >< AluI
AGTGAGCTTC GTCCAGACAC TCGTTATGTG CTTATGGATG GTTCCATCAT ACAGTTTCCT AACACTTACC
9040      9050      9060      9070      9080      9090      9100

                                >< RsaI
                                >< SfcI >< NspI
                                >< ScaI >< NspHI
                                >< RsaI >< NlaIII
                                >< SfaNI
                                >< Csp6I >< NlaIII
                                >< GsuI >< AfaI >< Csp6I
                                >< BpmI >< DdeI >< AccI >< AfaI
TGGAGGGTTC TGTTAGAGTA GTAACAACTT TTGATGCTGA GTACTGTAGA CATGGTACAT GCGAAAGGTC
9110      9120      9130      9140      9150      9160      9170

                                >< SstI
                                >< SduI
                                >< SacI
                                NspII ><
                                HgiAI ><
                                Eco24I ><
                                Bsp1286I ><

```

FIGURE 13.21

```

                                Ecl136II ><> BmyI
                                BanII ><
                                >< Tru9I
                                Alw21I ><
                                >< BsrI
                                >< MseI
                                >< AluI
AGAAGTAGGT ATTTGCCTAT CTACCACTGG TAGATGGGTT CTTAATAATG AGCATTACAG AGCTCTATCA
  9180          9190          9200          9210          9220          9230          9240

                                >< TfiI
                                >< HinfI
                                >< AluI
                                >< MnlI
>< SfaNI
GGAGTTTTCT GTGGTGTGA TCGATGAAT CTCATAGCTA ACATCTTTAC TCCTCTTGTC CAACCTGTGG
  9250          9260          9270          9280          9290          9300          9310

                                >< MaeIII
                                HphI ><
>< Eco57I
GTGCTTTAGA TGTGTCTGCT TCAGTAGTGG CTGGTGGTAT TATTGCCATA TTGGTGACTT GTGCTGCCTA
  9320          9330          9340          9350          9360          9370          9380

                                >< RsaI
                                >< Csp6I
                                >< NlaIII
                                >< MaeII
                                >< BbvI
                                >< Fnu4HI
                                >< AflIII
                                >< AfaI>< HphI
                                >< BspWI
CTACTTTATG AAATTCAGAC GTGTTTTTGG TGAGTACAAC CATGTTGTTG CTGCTAATGC ACTTTTGTTC
  9390          9400          9410          9420          9430          9440          9450

                                >< RsaI
                                >< NlaIV
                                >< KpnI
                                >< Eco64I
                                >< Csp6I
                                >< BscBI
                                >< Asp718
                                >< BanI >< AluI
                                >< AfaI
                                >< AccBII
                                >< Acc65I
                                >< ScrFI
                                >< NciI
                                >< MspI
                                >< HpaII
                                >< HinfI
                                >< HapII
                                >< PleI
                                >< BcnI
                                >< DdeI
TTGATGTCTT TCACTATACT CTGTCTGGTA CCAGCTTACA GCTTTCTGCC GGGAGTCTAC TCAGTCTTTT
  9460          9470          9480          9490          9500          9510          9520

                                >< RsaI
                                >< Csp6I
                                >< AfaI >< HphI
                                >< HphI
                                NlaIII ><
ACTTGTACTT GACATTCTAT TTCACCAATG ATGTTTCATT CTTGGCTCAC CTTCAATGGT TTGCCATGTT
  9530          9540          9550          9560          9570          9580          9590

TTCTCCTATT GTGCCTTTTT GGATAACAGC AATCTATGTA TTCTGTATTT CTCTGAAGCA CTGCCATTGG
  9600          9610          9620          9630          9640          9650          9660

                                >< TthHB8I
                                >< RsaI
                                >< MnlI
                                >< MnlI
                                >< Csp6I
                                >< Tru9I
                                >< PleI
                                >< BcgI/a >< TaqI
                                >< MseI
                                >< DdeI
                                >< NlaIII
                                >< BbvI
                                >< Eco57I
                                >< BfrI
                                >< HinfI
                                >< MseI
                                >< MaeIII
                                >< AfaI
                                >< Fnu4HI ><
TTCTTTAACA ACTATCTTAG GAAAAGAGTC ATGTTTAATG GAGTTACATT TAGTACCTTC GAGGAGGCTG
  9670          9680          9690          9700          9710          9720          9730

                                >< RsaI
                                >< Csp6I
                                >< BcgI
                                >< RsaI
                                >< Csp6I
                                >< BsmAI

```

FIGURE 13.22

```

      >< AfaI      >< AfaI      >< Alw26I
CTTTGTGTAC CTTTTTGCTC AACAAAGGAAA TGTACCTAAA ATTGCGTAGC GAGACACTGT TGCCACTTAC
  9740      9750      9760      9770      9780      9790      9800

      >< RsaI      >< NlaIV
      >< DdeI
      >< Csp6I      >< BscBI
      >< AfaI      >< BfrI      AluI ><
ACAGTATAAC AGGTATCTTG CTCTATATAA CAAGTACAAG TATTTCAGTG GAGCCTTAGA TACTACCAGC
  9810      9820      9830      9840      9850      9860      9870

      >< Fnu4HI
      >< DdeI
      >< Fnu4HI      >< BfrI
      >< BbvI      >< AluI      >< BbvI      >< DdeI >< AlwNI
TATCGTGAAG CAGCTTGCTG CCACTTAGCA AAGGCTCTAA ATGACTTTAG CAACTCAGGT GCTGATGTTC
  9880      9890      9900      9910      9920      9930      9940

      >< SfcI      >< BsmI
      >< PstI      >< BscCI
TCTACCAACC ACCACAGACA TCAATCACTT CTGCTGTCTC GCAGAGTGGT TTAGGAAAA TGGCATTCCC
  9950      9960      9970      9980      9990      10000      10010

      >< RsaI
      >< NlaIII
      >< MaeIII
      >< Csp6I      >< Tru9I
      >< AfaI      >< MseI
GTCAGGCAAA GTTGAAGGGT GCATGGTACA AGTAACCTGT GGAACACAA CTCTTAATGG ATTGTGGTTG
  10020      10030      10040      10050      10060      10070      10080

      XhoII ><
      Sau3AI ><
      >< Tru9I      NdeII ><
      >< NspI      MflI ><
      >< NspHI      MboI ><
      >< NlaIII      DpnII ><
      >< MseI      BstYI ><
      >< MboII BspAI ><
      >< AccI      >< AflIII      >< BbsI      BglII ><
GATGACACAG TATACTGTCC AAGACATGTC ATTTGCACAG CAGAAGACAT GCTTAATCCT AACTATGAAG
  10090      10100      10110      10120      10130      10140      10150

      Pali >
      MscI >
      HaeIII >
      EaeI ><
      BsuRI >
      BshI >
      Bali >
      >< DpnI >< MboII
      >< Bsp143I      >< AluI
ATCTGCTCAT TCGCAAATCC AACCATAGCT TTCTTGTTCA GGCTGGCAAT GTTCAACTTC GTGTTATTGG
  10160      10170      10180      10190      10200      10210      10220

      >< DdeI >< Tru9I
      >< BfrI >< MseI      >< DdeI
CCATTCTATG CAAAATTGTC TGCTTAGGCT TAAAGTTGAT ACTTCTAACC CTAAGACACC CAAGTATAAA
  10230      10240      10250      10260      10270      10280      10290

      >< ScrFI
      >< MvaI
      >< EcoRII
      >< Ecl136I      >< SphI

```

FIGURE 13.23

```

    >< DsaV
    >< BstOI
    >< BstNI
    >< BsiI
    >< ApyI
    TTTGTCCGTA TCCAACCTGG TCAAACATTT TCAGTTCTAG CATGCTACAA TGGTTCACCA TCTGGTGT TT
    10300      10310      10320      10330      10340      10350      10360

    >< PaeI
    >< NspI
    >< NspHI
    >< RmaI >< NlaIII
    >< MaeI >< HphI

    >< Sau3AI
    >< NdeII
    >< MboI>< NlaIII
    >< DpnII
    >< Eco3II
    >< BsmAI
    >< BsaI>< NlaIII
    >< Alw26I
    ATCAGTGTGC CATGAGACCT AATCATACCA TTAAAGGTTT TTCCTTAAT GGATCATGTG GTAGTGT TGG
    10370      10380      10390      10400      10410      10420      10430

    >< Tru9I
    >< MseI
    >< Bsp143I
    >< BspAI>< AlwI
    >< Zsp2I
    >< Ppu10I
    >< NsiI>< SfaNI
    >< NdeI
    >< Mph1103I
    >< EcoT22I
    >< AvaIII >< AluI AfaI ><
    TTTTAACATT GATTATGATT GCGTGTCTTT CTGCTATATG CATCATATGG AGCTTCCAAC AGGAGTACAC
    10440      10450      10460      10470      10480      10490      10500

    >< SinI
    >< Sau96I
    >< NspIV
    >< NspHII
    >< Eco47I
    >< Cfr13I
    >< Bsi2I
    >< RsaI
    >< Csp6I>< DdeI
    >< AfaI>< BfrI
    GCTGGTACTG ACTTAGAAGG TAAATTCTAT GGTCCATTTG TTGACAGACA AACTGCACAG GCTGCAGGTA
    10510      10520      10530      10540      10550      10560      10570

    >< Bme18I >< HindII
    >< AvaII >< HincII
    >< AsuI>< BsgI >< BbvI >< BspMI AfaI ><
    >< SfcI
    >< RsaI ><
    >< PstI ><
    >< Fnu4HI
    >< Csp6I ><
    >< BspWI

    >< Tru9I
    >< MseI >< BbvI >< Fnu4HI
    CAGACACAAC CATAACATTA AATGTTTTGG CATGGCTGTA TGCTGCTGTT ATCAATGGTG ATAGGTGGTT
    10580      10590      10600      10610      10620      10630      10640

    >< Tru9I
    >< TfiI
    >< MseI
    >< HphI
    >< HinfI
    TCTTAATAGA TTCACCACTA CTTTGAATGA CTTTAACCTT GTGGCAATGA AGTACAACCTA TGAACCTTTG
    10650      10660      10670      10680      10690      10700      10710

    >< SinI
    >< Sau96I
    >< PssI
    >< Psp5II
    >< PpuMI
    >< NspIV
    >< NspHII
    >< NlaIV

```

FIGURE 13. 24

```

                                >< EcoO109I
                                >< Eco47I
    >< Sau3AI                    >< DraII
    >< NdeII                     >< Cfr13I
    >< MboI                      >< BsiZI
    >< DpnII>< NlaIII            >< BscBI
    >< DpnI >< HindII            >< Bme18I
    >< BspAI >< HincII            >< AvaII
    >< Bsp143I                   >< AsuI
                                >< MnlI
ACACAAGATC ATGTTGACAT ATTGGGACCT CTTTCTGCTC AAACAGGAAT TGCCGTCTTA GATATGTGTG
10720      10730      10740      10750      10760      10770      10780

                                >< StyI
                                >< RsaI
                                >< EcoT14I
                                >< Eco130I
                                >< SfcI
                                >< Fnu4HI
    >< Fnu4HI                    >< Fnu4HI
    >< BbvI                      >< Fnu4HI
    >< BbvI                      >< AluI >< PstI
    >< BbvI                      >< AfaI
CTGCTTTGAA AGAGCTGCTG CAGAATGGTA TGAATGGTCG TACTATCCTT GGTCAGCTA TTTAGAAGA
10790      10800      10810      10820      10830      10840      10850

                                >< StyI
                                >< EcoT14I
                                >< Eco130I
                                >< BssTII
                                >< MaeIII>< BsaJI
    >< MboII                    >< MaeIII>< BsaJI
TGAGTTTACA CCATTTGATG TTGTTAGACA ATGCTCTGGT GTTACCTTCC AAGGTAAGTT CAAGAAAATT
10860      10870      10880      10890      10900      10910      10920

                                >< SfaNI
                                >< SduI
                                >< NspII
    >< Tru9I> < Bsp1286I        >< Tru9I
    >< MseI > < BmyI           >< MseI
    >< MseI > < BmyI           >< FokI
GTTAAGGGCA CTCATCATTG GATGCTTTTA ACTTTCTTGA CATCACTATT GATTCTTGTT CAAAGTACAC
10930      10940      10950      10960      10970      10980      10990

                                >< XmnI
                                >< BsmI
                                >< BscCI
                                >< Asp700I
    >< MaeIII                    >< BbvI >< BbvI >
AGTGGTCACT GTTTTTCTTT GTTTACGAGA ATGCTTTCTT GCCATTTACT CTTGGTATTA TGGCAATTGC
11000      11010      11020      11030      11040      11050      11060

                                >< NspI
                                >< NspHI
                                >< NlaIII
    >< BspWI >< Fnu4HI>< BspWI >< BscCI
    >< BspWI >< Fnu4HI>< BspWI >< BscCI
TGCATGTGCT ATGCTGCTTG TTAAGCATAA GCACGCATTC TTGTGCTTGT TTCTGTTACC TTCTCTTGCA
11070      11080      11090      11100      11110      11120      11130

                                >< SfaNI
                                >< RmaI
                                >< NspI
                                >< NlaIII
                                >< NheI
                                >< MaeI
    >< BspWI >< MseI >< Tru9I >< AccI> < NspHI>< AluI
    >< BspWI >< MseI >< Tru9I >< AccI> < NspHI>< AluI
ACAGTTGCTT ACTTTAATAT GGTCTACATG CCTGCTAGCT GGGTGATGCG TATCATGACA TGGCTTGAAT
11140      11150      11160      11170      11180      11190      11200

```

FIGURE 13.25

39/116

```

                                >< Tru9I
                                >< MseI
    > < RmaI                    > < Esp4I
    > < MaeI                    >< Eco57I
                                >< AluI
                                > < AflIII
                                >< AluI
TGGCTGACAC TAGCTTGTCT GGTATAGGC TTAAGGATTG TGTTATGTAT GCTTCAGCTT TAGTTTTGCT
11210      11220      11230      11240      11250      11260      11270

                                >< RmaI
                                >< MaeII
                                >< MaeI
    > < NlaIII    >< SfaNI    >< Fnu4HI
    >< BspHI >< AluI    >< BbvI    >< AflIII
TATTCTCATG ACAGCTCGCA CTGTTTATGA TGATGCTGCT AGACGTGTTT GGACACTGAT GAATGTCATT
11280      11290      11300      11310      11320      11330      11340

                                >< Sau96I
                                >< Pali
                                >< NspIV
                                >< NlaIII
                                >< HaeIII
                                > < DdeI
                                >< Cfr13I
                                >< BsuRI
                                >< BsiZI
                                >< BshI
                                > < BfrI
                                >< Bsp143I
                                >< BspAI>< AluI
                                >< AsuI
ACACTTGTTC ACAAAGTCTA CTATGGTAAT GCTTTAGATC AAGCTATTTC CATGTGGGCC TTAGTTATTT
11350      11360      11370      11380      11390      11400      11410

                                >< RmaI
                                >< NlaIII
                                >< MaeI>< SfcI
                                >< AluI>< AluI
    >< MaeIII    >< MnlI    >< MaeIII
CTGTAACCTC TAACTATTCT GGTGTCGTTA CGACTATCAT GTTTTTAGCT AGAGCTATAG TGTGTGTGTG
11420      11430      11440      11450      11460      11470      11480

                                DdeI >
                                >< BsrI
                                >< NlaIII BfrI >
TGTGAGTAT TACCCATTGT TATTTATTAC TGGCAACACC TTACAGTGTA TCATGCTTGT TTATTGTTTC
11490      11500      11510      11520      11530      11540      11550

                                >< Pali
                                >< HaeIII
                                >< Fnu4HI
                                >< BsuRI
    >< BbvI    >< Fnu4HI    >< BspWI
    >< BbvI    >< BspWI    >< BshI    >< Eco57I    >< MaeIII
TTAGGCTATT GTTGCTGCTG CTACTTTGGC CTTTTCTGTT TACTCAACCG TTACTTCAGG CTTACTCTTG
11560      11570      11580      11590      11600      11610      11620

                                >< ScrFI
                                >< MvaI
                                >< EcoRII
                                >< Ecl136I
                                >< DsaV
                                >< BstOI
                                >< BstNI
                                >< BsiLI
                                > < BsaJI
                                >< BsaJI
    >< Eco31I
    >< BsmAI
    >< BsaI

```

FIGURE 13.26

40/116

```

    >< DrdI >< Alw26I
GTGTTTATGA CTACTTGGTC TCTACACAAG AATTTAGGTA TATGAACTCC CAGGGGCTTT TGCCTCCTAA
11630      11640      11650      11660      11670      11680      11690

    >< Tru9I
    >< MseI
>< SfaNI      > < HindIII> < Tru9I
    >< MnlI      >< AluI > < MseI > < MnlI      > < NlaIII
GAGTAGTATT GATGCTTTCA AGCTTAACAT TAAGTTGTTG GGTATTGGAG GTAAACCATG TATCAAGGTT
11700      11710      11720      11730      11740      11750      11760

    >< VneI
    >< SniI
    >< SduI
    >< NspII
    >< HgiAI
    >< Bsp1286I
    >< BmyI >< RsaI
    >< RsaI      >< ApaLI      >< MboII
    >< Csp6I      >< Alw44I >< Csp6I      DdeI >
    >< AfaI      >< MaeII >< Alw21I >< AfaI      BfrI >
GCTACTGTAC AGTCTAAAAT GTCTGACGTA AAGTGCACAT CTGTGGTACT GCTCTCGGTT CTTCAACAAC
11770      11780      11790      11800      11810      11820      11830

    >< NspII> < RsaI
    >< DraIII
    >< SduI>< Csp6I
    >< Bsp1286I
    >< MboII
    >< HinfI >< PheI
    >< BmyI > < AfaI >< MboII
TTAGAGTAGA GTCATCTTCT AAATTGTGGG CACAATGTGT ACAACTCCAC AATGATATTC TTCTTGCAAA
11840      11850      11860      11870      11880      11890      11900

    >< TthHB8I
    >< TaqI
    >< HindIII
    >< AluI      >< Eco57I
    >< MboII      >< NlaIII
AGACACAACCT GAAGCTTTTCG AGAAGATGGT TTCTCTTTTG TCTGTTTTGC TATCCATGCA GGGTGCTGTA
11910      11920      11930      11940      11950      11960      11970

    >< VspI
    >< Tru9I
    >< MseI      >< TthHB8I      >< Ksp632I
    >< AsnI      >< TaqI >< MboII      >< EarI
    >< AseI>< MnlI >< BcgI/a >< Eco57I >< Eco57I >< BcgI
GACATTAATA GGTGTGCGA GGAAATGCTC GATAACCGTG CTACTCTTCA GGCTATTGCT TCAGAATTTA
11980      11990      12000      12010      12020      12030      12040

    >< StuI
    >< ScrFI
    >< Pali
    >< MvaI>< HaeIII
    >< EcoRII>< Eco147I
    >< Ecl136I
    >< DsaV >< BsuRI
    >< BstOI
    >< BstNI
    >< BspWI
    >< EsiLI
    >< Fnu4HI      >< BsaJI >< BshI      TfiI ><
    >< NdeI      >< BspWI>< MnlI >< BglI      >< SfcI HinfI ><
    >< AciI      >< ApyI>< AatI      >< AluI

```

FIGURE 13. 27

GTTCTTTACC ATCATATGCC GCTTATGCCA CTGCCCAGGA GGCCTATGAG CAGGCTGTAG CTAATGGTGA
 12050 12060 12070 12080 12090 12100 12110

>> XmnI	>> Tru9I	>> SfaNI
>> HphI	>> MseI	>> DdeI
>> Asp700I	>> Eco57I	>> BbvI Fnu4HI >>
TTCTGAAGTC GTTCTCAAAA	AGTTAAAGAA ATCTTTGAAT	GTGGCTAAAT CTGAGTTTGA CCGTGATGCT
12120 12130	12140 12150	12160 12170 12180

XhoII ><
Sau3AI ><
NdeII ><

```

      MnlI >
<> MnlI
      <> MflI
      <> MboI

```

DpnII ><
DpnI ><
DdeI ><

BstYI ><
IBspAI ><
IBsp143I ><

>> NlaIII			>> Bsp143I		>> AfaIBglII ><	
GCCATGCAAC	GCAAGTTGGA	AAAGATGGCA	GATCAGGCTA	TGACCCAAAT	GTACAAACAG	GCAAGATCTG
12190	12200	12210	12220	12230	12240	12250

```
>< SpeI           >< Ksp632I   >< HindIII
  >< RmaI          >< DdeI     >< SfaNI
```

```
>> MaeIII      >> MboII      >> Eam1104I >> BspWI
      >> MaeI      >> BspWI      >> EarI>> BfrI   >> AluI
```

AGGACAAGAG	GGCAAAAGTA	ACTAGTGCTA	TGCAAACAAT	GCTCTTCACT	ATGCTTAGGA	AGCTTGATAA
12260	12270	12280	12290	12300	12310	12320

```

>< ThaI
>< MvnI
>< HinPII
>< Hin6I

```

>< HhaI
>< CfoI

>< Tru9I			>< Bsp50I			
>< MseI			>< AccII		SfcI >	
TGATGCAC TT AACA AC ATTA TCAACA AT GC GCGTGA TG GT TGTGTT CC AC TCAACAT CAT ACCATT GA CT						
12330 12340 12350 12360 12370 12380 12390						

```

    >< RsaI
    >< NlaIV
  >< Eco64I
    >< Csp6I
>< BslI
>< BsiYI>< KpnI
    >< BscBI

```

>< BanI
>< Asp718

>< NlaIII >< AfaI

	>> BstXI		>> AccB1I		>> MaeIII
>> Fnu4HI	>> BbvI		>> Acc65I		BsgI >>
ACAGCAGCCA	AACTCATGGT	TGTTGTCCCT	GATTATGGTA	CCTACAAGAA	CACTTGATGAT
12400	12410	12420	12430	12440	12450
					GGTAACACCT
					12460

FIGURE 13.28

```

      >< NsiI
      >< Mph1103I
    >< NdeI>< EcoT22I
      >< AvaIII >< SfaNI
      >< SfaNI >< AciI
      DdeI ><
      BfrI ><
TTACATATGC ATCTGCACTC TGGGAAATCC AGCAAGTTGT TGATGCGGAT AGCAAGATTG TTCAACTTAG
      12470      12480      12490      12500      12510      12520      12530

      >< Pali
      >< HaeIII >< MnlI >< DdeIDdeI ><
      >< BsuRI >< MaeIII >< BspWI
    >< Tru9I>< NlaIII
    >< MseI>< HphI >< XcmI>< BshI >< AluI BspWI ><
TGAAATTAAC ATGGACAATT CACCAAATTT GGCTTGGCCT CTTATTGTTA CAGCTCTAAG AGCCAACTCA
      12540      12550      12560      12570      12580      12590      12600

      RsaI ><
      NlaIV ><
      KpnI ><
      >< Fnu4HI
      Eco64I ><
      Csp6I ><
      BscBI ><
      Asp718 ><
      AfaI ><
    >< AciI>< Bani
      AccB1I ><
    >< AluI >< SfcI >< DdeI>< BsrI >< PshAI Acc65I ><
GCTGTAAAC TACAGAATAA TGAAGTGAAGT CCAGTAGCAC TACGACAGAT GTCCTGTGCG GCTGGTACCA
      12610      12620      12630      12640      12650      12660      12670

      >< TthHB8I
      >< TaqI
      >< SfuI
      >< NspV
    >< MnlI
      >< LspI
      >< Csp45I
      >< BstBI
      >< Bsp119I
      >< BsiCI
      >< Bpu14I
      >< AsuII
    >< RsaI
    >< Csp6I
    >< AluI
    >< AfaI
CACAAACAGC TTGTACTGAT GACAATGCAC TTGCCTACTA TAACAATTTCG AAGGGAGGTA GGTTTGTGCT
      12680      12690      12700      12710      12720      12730      12740

      >< XhoII
      >< Sau3AI
      >< NdeII
      >< MflI
      >< MboI
      >< DpnII
      >< DpnI
      >< BstYI >< TfiI >< RsaI
      >< BspAI >< RmaI >< Csp6I
      >< Bsp143I >< HinfI >< Csp6I>< RsaI
      >< BglII >< MaeI >< DdeI >< AfaI>< AfaI
GGCATTACTA TCAGACCACC AAGATCTCAA ATGGGCTAGA TTCCCTAAGA GTGATGGTAC AGGTACAATT
      12750      12760      12770      12780      12790      12800      12810

      >< Sau96I
      >< PssI
      >< Pali
      >< NspIV

```

FIGURE 13.29

```

                                >< HaeIII
                                >< EcoO109I
                                >< DraII
                                >< CfrI3I
                                >< BsuRI
                                >< BsiZI
                                >< BshI
                                >< AsuI
                                RsaI >
                                Csp6I ><
                                AfaI >
TACACAGAAC TGGAACCACC TTGTAGGTTT GTTACAGACA CACCAAAAGG GCCTAAAGTG AAATACTTGT
12820      12830      12840      12850      12860      12870      12880

                                >< SfcI
                                > < MboII
                                MaeII ><
                                >< Fnu4HI >< RsaI
                                >< Eco57I >< Csp6I
                                > < BbsI
                                >< Tru9I
                                >< MseI >< MnlI
                                >< BbvI
                                >< AluI
                                >< AfaI
ACTTCATCAA AGGCTTAAAC AACCTAAATA GAGGTATGGT GCTGGGCAGT TTAGCTGCTA CAGTACGTCT
12890      12900      12910      12920      12930      12940      12950

                                >< RsaI
                                >< SfcI >< Csp6I
                                >< BspWI >< AfaI >< BspMI
                                >< AccI ><
TCAGGCTGGA AATGCTACAG AAGTACCTGC CAATTCAACT GTGCTTTCCT TCTGTGCTTT TGCAGTAGAC
12960      12970      12980      12990      13000      13010      13020

                                >< RmaI
                                >< MnlI
                                >< MaeI >< HphI
CCTGCTAAAG CATATAAGGA TTACCTAGCA AGTGGAGGAC AACCAATCAC CAACTGTGTG AAGATGTTGT
13030      13040      13050      13060      13070      13080      13090

                                >< SinI
                                >< Sau96I
                                >< NspIV
                                >< NspHII
                                >< NlaIII
                                >< Eco47I
                                >< Eam1105I
                                >< CfrI3I
                                >< BsiZI
                                >< BmeI8I >< XcmI
                                >< AfaI >< PleI ><
                                >< MaeIII >< AluI >< AsuI >< HinfI
GTACACACAC TGGTACAGGA CAGGCAATTA CTGTAACACC AGAAGCTAAC ATGGACCAAG AGTCCTTTGG
13100      13110      13120      13130      13140      13150      13160

                                >< TfiI
                                >< MaeIII
                                >< SfaNI
                                >< NlaIII >< FokI
                                >< HinfI
TGGTGCTTCA TGTTGTCTGT ATTGTAGATG CCACATTGAC CATCCAAATC CTAAGGATT CTGTGACTTG
13170      13180      13190      13200      13210      13220      13230

                                > < RsaI
                                >< MaeII
                                >< Csp6I
                                > < AfaI
                                >< DdeI
                                >< BfrI
AAAGGTAAGT ACGTCCAAAT ACCTACCACT TGTGCTAATG ACCCAGTGGG TTTTACACTT AGAAACACAG
13240      13250      13260      13270      13280      13290      13300

                                >< ThaI

```

FIGURE 13.30

```

                                >< SfaNI
                                >< MvnI
                                >< BstUI
                                >< Bsp50I
                                >< AciI
                                >< AccIISfaNI ><
>< RsaI
>< Csp6I
>< AfaI >< AciI
TCTGTACCGT CTGCGGAATG TGGAAAGGTT ATGGCTGTAG TTGTGACCAA CTCCGCGAAC CCTTGATGCA
13310      13320      13330      13340      13350      13360      13370

>< Zsp2I
> < SfaNI
>< Mph1103I>< Tru9I
>< Ppu10I>< MaeII
>< NsiI> < FokI
>< EcoT22I >< MseI
                                Fnu4HI ><
                                BsgI ><
                                >< BbvI
>< AciI>< AvaIII >< DraI >< AciI >< Fnu4HI AciI ><
GTCTGCGGAT GCATCAACGT TTTTAAACGG GTTTGCGGTG TAAGTGCAGC CCGTCTTACA CCGTGC GGCA
13380      13390      13400      13410      13420      13430      13440

>< SpeI
>< ScaI
>< RsaI
>< RmaI
>< MaeI
> < Csp6I >< SfcI
>< BspWI >< AfaI >< AccI >< BcgI/a >< BspWI
CAGGCACTAG TACTGATGTC GTCTACAGGG CTTTGTATAT TTACAACGAA AAAGTTGCTG GTTTTGCAAA
13450      13460      13470      13480      13490      13500      13510

>< ScrFI
>< MvaI
>< MnlI
>< EcoRII
>< Ecl136I
>< BstOI
>< BstNI
>< BslI
>< DsaV >< BsiYI
>< BsiLI
>< ApyI
                                >< PleI
                                > < FokI >< HinfI
GTTCTTAAAA ACTAATTGCT GTCGCTTCCA GGAGAAGGAT GAGGAAGGCA ATTTATTAGA CTCTTACTTT
13520      13530      13540      13550      13560      13570      13580

>< NlaIII
>< Ksp632I
>< EarI
>< Eam1104I
>< BsmAI
>< Alw26I
>< MboII
>< Tru9I
>< MseI
>< MnlI
GTAGTTAAGA GGCATACTAT GTCTAACTAC CAACATGAAG AGACTATTTA TAACTTGGTT AAAGATTGTC
13590      13600      13610      13620      13630      13640      13650

>< RsaI
>< NlaIV
> < NlaIII
>< KpnI
>< HphI
> < Eco64I
>< Csp6I
>< BscBI
> < BanI
> < Asp718

```

FIGURE 13.31

```

>> NspBII
>> AciI
CAGCGGTTGC TGTCCATGAC TTTTCAAGT TTAGAGTAGA TGGTGACATG GTACCACATA TATCAGTCA
13660 13670 13680 13690 13700 13710 13720

>> MaeIII >> AfaI
> < AccBII MaeII >>
> < Acc65I > < HgaI
>> MnlI
>> MaeII
GCGTCTAACT AAATACACAA TGGCTGATTT AGTCTATGCT CTACGTCATT TTGATGAGGG TAATTGTGAT
13730 13740 13750 13760 13770 13780 13790

>> Tru9I
>> MseI >> MaeIII >> MnlI
ACATTAAAAG AAATACTCGT CACATACAAT TGCTGTGATG ATGATTATTT CAATAAGAAG GATTGGTATG
13800 13810 13820 13830 13840 13850 13860

>> ThaI
>> MvnI
>> MluI
>> BstUI
>> Bsp50I
>> RsaI
>> HphI
>> TfiI >> AflIII >> DdeI >> Csp6I Tru9I >>
>> HinfI >> AccII >> BfrI >> AfaI MseI >>
ACTTCGTA GAATCCTGAC ATCTTACGCG TATATGCTAA CTTAGGTGAG CGTGTACGCC AATCATTATT
13870 13880 13890 13900 13910 13920 13930

XhoII >
Sau3AI >
NdeII >
MflI >
MboI >
> < SfaNI >> RsaI >> RsaI MboI >
>> RsaI > < Csp6I DpnII >
>> Csp6I >> BspWI BstYI >
>> AfaI >> AfaI BspAI >
AAAGACTGTA CAATTCTGCG ATGCTATGCG TGATGCAGGC ATTGTAGGCG TACTGACATT AGATAATCAG
13940 13950 13960 13970 13980 13990 14000

> < ScrFI
> < MvaI
>> Fnu4HI
>> EcoRII
> < Ecl136I
> < BstOI
> < BstNI
>> Tru9I >> RsaI >> BslI
>> MseI >> RsaI >> HphI >> BsiYI
>> DpnI >> Csp6I >> Csp6I > < BsiLI
>> Bsp143I >> BsrI >> < BbvI > < ApyI
>> AlwI >> AfaI >> AfaI >> DsaV >> AciI
GATCTTAATG GGAAGTGGTA CGATTTCGGT GATTTCGTAC AAGTAGCACC AGGCTGCGGA GTTCCTATTG
14010 14020 14030 14040 14050 14060 14070

>> SfaNI
>> RmaI >> HinfI
>> MnlI >> Fnu4HIPleI >>
>> TfiI >> SfaNI >> MamI >> BsiBI >> DdeI
>> HinfI >> FokI >> BsaBI >> BbvI >> BspWI NdeI >>
TGGATTGATA TTACTCATTG CTGATGCCCA TCCTCACTTT GACTAGGGCA TTGGCTGCTG AGTCCCATAT
14080 14090 14100 14110 14120 14130 14140

>> Sau3AI
>> NdeII

```

FIGURE 13.32

FIGURE 13.33

FIGURE 13.33

```

    >< Sau3AI          >< NspHI
    >< NdeII           >< NsiI
    >< MboI             >< NlaIII
    >< DpnII            >< Mph1103I
    > < DpnI           >< Fnu4HI
    >< Fnu4HI>< BspWI   >< EcoT22I
    >< BspAI            >< BspWI
    > < Bsp143I> < AvalIII > < AlwNI
    >< AlwI             >< AluI   >< AluI   >< BbvI   >< MaeI
    ATGCTGCTGA TCCAGCTATG CATGCAGCTT CTGGCAATTT ATTGCTAGAT AAACGCACTA CATGCTTTTC
    14500      14510      14520      14530      14540      14550      14560

                                >< ScrFI
                                >< NciI
                                >< MspI
                                >< HpaII
                                >< HapII
    >< Fnu4HI
    >< AlwNI
    >< AluI
    AGTAGCTGCA CTAACAAACA ATGTTGCTTT TCAAACTGTC AAACCCGGTA ATTTTAATAA AGACTTTTAT
    14570      14580      14590      14600      14610      14620      14630

                                >< Tru9I
                                >< MseI
                                >< MboII
                                DdeI ><
                                BbvI ><
    GACTTTGCTG TGTCTAAAGG TTTCTTTAAG GAAGGAAGTT CTGTTGAACT AAAACACTTC TTCTTTGCTC
    14640      14650      14660      14670      14680      14690      14700

                                >< FokI
                                >< Fnu4HI
                                EcoRV ><
                                Eco32I ><
    AGGATGGCAA CGCTGCTATC AGTGATTATG ACTATTATCG TTATAATCTG CCAACAATGT GTGATATCAG
    14710      14720      14730      14740      14750      14760      14770

                                >< VspI
                                >< Tru9I
                                >< MseI
                                >< AsnI
                                >< AseI
                                >< MaeIII
    ACAACTCCTA TTCGTAGTTG AAGTTGTTGA TAAATACTTT GATTGTTACG ATGGTGGCTG TATTAATGCC
    14780      14790      14800      14810      14820      14830      14840

    >< Tru9I
    >< MseI
    >< HpaI
    >< HindII
    >< HincII
    >< PvuII
    >< Psp5I
    >< NspBII
    >< AluI
    >< XcmI
    >< Tru9I
    >< MseI
    RmaI ><
    MaeI ><
    AACCAAGTAA TCGTTAACAA TCTGGATAAA TCAGCTGGTT TCCCATTTAA TAAATGGGGT AAGGCTAGAC
    14850      14860      14870      14880      14890      14900      14910

    >< SfaNI
    >< Sau3AI
    >< NdeII
    >< MboI
    >< DpnII
    >< DpnI
    >< Bsp143I
    >< BspWI
    >< Bsp50I
    >< AccII>< DdeI
    >< AccI
    >< PleI
    >< HinfI>< MnlI
    >< BspAI >< AlwI
    TTTATTATGA CTCAATGAGT TATGAGGATC AAGATGCACT TTTCGCGTAT ACTAAGCGTA ATGTCATCCC
    14920      14930      14940      14950      14960      14970      14980

                                >< SstI
                                >< SduI
                                >< SacI

```

FIGURE 13.34

1. The first step in the process of identifying a problem is to recognize that a problem exists. This involves gathering information about the situation and identifying the specific issue that needs to be addressed. Once the problem is identified, the next step is to define the problem clearly and concisely. This involves stating the problem in a way that is specific and measurable, and identifying the goals that need to be achieved in order to solve the problem. The third step in the process is to generate potential solutions. This involves brainstorming ideas and considering different approaches to solving the problem. Once potential solutions have been generated, the next step is to evaluate the solutions and select the best one. This involves comparing the solutions based on their feasibility, effectiveness, and cost, and selecting the solution that is most likely to achieve the desired goals. The final step in the process is to implement the selected solution. This involves putting the solution into action and monitoring its progress to ensure that it is effective and achieving the desired goals. The process of identifying and solving a problem is a continuous one, and it may be necessary to revisit the problem at a later date to ensure that it has been fully resolved.

1. The first step in the process of identifying a problem is to recognize that a problem exists. This involves gathering information about the situation and identifying the specific issue that needs to be addressed. Once the problem is identified, the next step is to define the problem clearly and concisely. This involves stating the problem in a way that is specific and measurable, and identifying the goals that need to be achieved in order to solve the problem. The third step in the process is to generate potential solutions. This involves brainstorming ideas and considering different approaches to solving the problem. Once potential solutions have been generated, the next step is to evaluate the solutions and select the best one. This involves comparing the solutions based on their feasibility, effectiveness, and cost, and selecting the solution that is most likely to achieve the desired goals. The final step in the process is to implement the selected solution. This involves putting the solution into action and monitoring its progress to ensure that it is effective and achieving the desired goals.


```

AGGTGGAACA TCATCCGGTG ATGCTACAAC TGCTTATGCT AATAGTGTCT TTAACATTTG TCAAGCTGTT
15410      15420      15430      15440      15450      15460      15470

>> BspWI                                     >> AluI                                     >< AciI
ACAGCCAATG TAAATGCACT TCTTTCAACT GATGGTAATA AGATAGCTGA CAAGTATGTC CGCAATCTAC
15480      15490      15500      15510      15520      15530      15540

>< DrdI
>< Sau3AI
>< NdeII
>< MboI
> < MamI
>< FbaI
>< DpnII
>< DpnI
>< BspHI
>< BspAI
>< Bsp143I
>< BsiQI
>< SfcI                                     > < BsiBI>< NlaIII
>< BsmAI                                     > < BsaBI>< FokI
>< Alw26I                                     >< BclI>< EcoRI                                     FokI ><
AACACAGGCT CTATGAGTGT CTCTATAGAA ATAGGGATGT TGATCATGAA TTCGTGGATG AGTTTTACGC
15550      15560      15570      15580      15590      15600      15610

>< TfiI
>< SfaNI
>< NlaIII
>< BspMI                                     >< HinfI                                     >< MaeIII
TTACCTGCGT AAACATTTCT CCATGATGAT TCTTTCTGAT GATGCCGTTG TGTGCTATAA CAGTAACAT
15620      15630      15640      15650      15660      15670      15680

> < RmaI
>< NheI >< Tru9I
>< Fnu4HI                                     > < MaeI                                     >< Tru9I
>< AciI                                     >< AluI >< MseI                                     >< MseI                                     MnlI ><
GCGGCTCAAG GTTTAGTAGC TAGCATTAAG AACTTTAAGG CAGTTCTTTA TTATCAAAT AATGTGTTCA
15690      15700      15710      15720      15730      15740      15750

>< SinI
>< Sau96I
>< PssI
>< Psp5II
>< PpuMI
>< NspIV
>< NspHII
>< EcoO109I
>< Eco47I
>< DraII
>< Cfr13I
>< BsiZI
>< Bme18I
>< AvaII
>< AsuI                                     >< MnlI
>< NlaIII                                     >< BsmAI
>< DdeI                                     >< Alw26I
TGTCTGAGGC AAAATGTTGG ACTGAGACTG ACCTTACTAA AGGACCTCAC GAATTTTGCT CACAGCATAC
15760      15770      15780      15790      15800      15810      15820

>< XhoII
>< Sau3AI
>< NdeII
>< MflI
>< MboI

```

FIGURE 13. 36

50/116

```

                >< RsaI          >< DpnII
                >< MaeII        >< DpnI   > < SspI
                >< Tru9I        >< Csp6I   >< BstYI   HinPII ><
                >< RmaI          >< BsaAI    >< BspMI    Hin6I ><
                >< MaeI          >< AflIII   >< BspAI    HhaI ><
                >< BspWI>< MseI    >< AfaI    >< AlwI>< Bsp143I CfoI ><
AATGCTAGTT AAACAAGGAG ATGATTACGT GTACCTGCCT TACCCAGATC CATCAAGAAT ATTAGGCGCA
15830      15840      15850      15860      15870      15880      15890

                >< RsaI          >< SfaNI
                >< TthHB8I      >< Csp6I   >< MaeIII
                >< TaqI        >< AfaI    >< BsrI ><
GGCTGTTTTG TCGATGATAT TGTCAAAACA GATGGTACAC TTATGATTGA AAGGTTCTGT TCACTGGCTA
15900      15910      15920      15930      15940      15950      15960

                > < FokI
                >< BspWI
TTGATGCTTA CCCACTTACA AAACATCCTA ATCAGGAGTA TGCTGATGTC TTCACTTGT ATTTACAATA
15970      15980      15990      16000      16010      16020      16030

                >< Van91I
                >< PflMI
                >< NspI
                > < Pali>< NspHI
                > < MscI>< NlaIII
                > < HaeIII
                > < BsuRI
                >< BsrI
                >< EaeI >< BslI >< NspI
                > < BshI>< BsiYI >< NspHI
                >< NlaIII      >< AflIII >< AflIII
                >< MaeIII      >< AluI > < Bali>< AccB7I >< NlaIII
CATTAGAAAG TTACATGATG AGCTTACTGG CCACATGTTG GACATGTATT CCGTAATGCT AACTAATGAT
16040      16050      16060      16070      16080      16090      16100

                >< RsaI> < NlaIV
                >< MnlI
                >< Csp6I >< DdeI          >< RsaI
                >> BsrI >< MnlI      >< Csp6I
                >< AfaI> < BscBI      >< AfaI          SfcI ><
AACACCTCAC GGTACTGGGA ACCTGAGTTT TATGAGGCTA TGTACACACC ACATACAGTC TTGCAGGCTG
16110      16120      16130      16140      16150      16160      16170

                >< NlaIV
                >< EcoNI
                >< Eco31I
                >< Eco64I>< BsmAI
                >< BscBI >< BslI
                >< BanI >< BsiYI
                >< AciI >< BsaI
                >< AccB1I>< Alw26I BbvI ><
                >< BspWI
TAGGTGCTTG TGTATTGTGC AATTCACAGA CTTCACTTCG TTGCGGTGCC TGTATTAGGA GACCATTCTT
16180      16190      16200      16210      16220      16230      16240

                >< Tth111I
                >< Fnu4HI >< NlaIII      > < Tru9I
                >< BspWI >< AspI      > < MseI
ATGTTGCAAG TGCTGCTATG ACCATGTCAT TTCAACATCA CACAAATTAG TGTGTCTGT TAATCCCTAT
16250      16260      16270      16280      16290      16300      16310

                >< ScrFI
                >< MvaI

```

FIGURE 13.37

```

>< EcoRII
  >< Ecl136I
>< DsaV
  >< BstOI
  >< BstNI
  >< BsiLI
    >< RmaI
  >< BsaJI
    >< MnlI
    BspWI ><
  >< ApyI
  >< MaeIII >< MaeIII
    >< MaeI
    >< AluI
GTTTGCAATG CCCAGGTTG TGATGTCACT GATGTGACAC AACTGTATCT AGGAGGTATG AGCTATTATT
16320      16330      16340      16350      16360      16370      16380

>< MaeIII
  >< MnlI
GCAAGTCACA TAAGCCTCCC ATTAGTTTTT CATTATGTGC TAATGGTCAG GTTTTTGGTT TATACAAAAA
16390      16400      16410      16420      16430      16440      16450

>< NspI
>< NspHI
>< NlaIII>< MaeIII>< MaeIII
  >< AflIII
  >< AspI
    >< AflIII
CACATGTGTA GGCAGTGACA ATGTCACTGA CTTCAATGCG ATAGCAACAT GTGATTGGAC TAATGCTGGC
16460      16470      16480      16490      16500      16510      16520

    >< RsaI
    >< P1eI
    >< DdeI
  >< Csp6I
    >< BsmAI >< HinfI
    >< Alw26I
    >< AfaI
    >< HindIII
    >< AluI >< Fnu4HI >< BbvI
GATTACATAC TTGCCAACAC TTGTACTGAG AGACTCAAGC TTTTCGCAGC AGAAACGCTC AAAGCCACTG
16530      16540      16550      16560      16570      16580      16590

    >< ThaI
    >< ScaI
    >< RsaI >< RsaI
    >< MvnI
  >< Csp6I >< Csp6I
    >< BstUI
    >< Bsp50I
  >< Tru9I
  >< MseI >< NdeI
    >< AfaI >< AfaI
    >< AccII
  MnlI >
AGGAAACATT TAAGCTGTCA TATGGTATTG CCACTGTACG CGAAGTACTC TCTGACAGAG AATTGCATCT
16600      16610      16620      16630      16640      16650      16660

    MaeIII ><
    >< MaeIII
    >< EcoO651
    >< Eco91I
    >< BstPI
    >< BstEII
    >< BsrI
  >< SfaNI
  >< NlaIII
  >< RmaI
  >< MaeI
TTCATGGGAG GTTGGAAAAC CTAGACCACC ATTGAACAGA AACTATGTCT TTA CTGGTTA CCGTGTA ACT
16670      16680      16690      16700      16710      16720      16730

    RsaI ><
    >< MnlI
    >< HphI
  >< RsaI
  >< Csp6I
  >< AfaI
  >< SfaNI
  >< MaeIII
  >< HphI AfaI ><
AAAAATAGTA AAGTACAGAT TGGAGAGTAC ACCTTTGAAA AAGGTGACTA TGGTGATGCT GTTGTGTACA
16740      16750      16760      16770      16780      16790      16800

```

FIGURE 13. 38

```

>< RsaI
>< Csp6I
>< AfaI
GAGGTACTAC GACATACAAG TTGAATGTTG GTGATTACTT TGTGTTGACA TCTCACA CTG TAATGCCACT
16810      16820      16830      16840      16850      16860      16870

>< VneI
>< SnuI
>< SduI
>< NspII
>< HgiAI
>< DraIII
>< Bsp1286I
>< BmyI
>< ApaLI
>< Alw44I
>< Alw21I
TAGTGCACCT ACTCTAGTGC CACAAGAGCA CTATGTGAGA ATTACTGGCT TGTACCCAAC ACTCAACATC
16880      16890      16900      16910      16920      16930      16940

>< HphI
>< HindII
>< HincII
DdeI ><
BfrI ><

>< SduI
>< NspII
>< HgiAI
>< BspWI
>< DraIII
>< RsaI
>< Csp6I
>< BsrI
>< AfaI
DdeI >

StyI ><
SinI >
Sau96I >
NspIV >
EcoT14I ><
Eco47I >
Eco130I ><
>< ScaI Cfr13I >
BssT1I ><
>< SphI >< RsaI BsiZI >
>< PaeI BsaJI ><
>< NlaIII Bme18I >
>< NspI>< Csp6I AvaII >
>< NspHI>< AfaI AsuI >

>< RmaI
>< MaeI
TCAGATGAGT TTTCTAGCAA TGTTGCAAAT TATCAAAAGG TCGGCATGCA AAAGTACTCT ACACTCCAAG
16950      16960      16970      16980      16990      17000      17010

>< ScrFI
>< RsaI
>< MvaI
>< EcoRII
>< Ecl136I
>< Csp6I
>< BstOI
>< BstNI
>< XcmI
>< BslI
>< NspHII
>< BsiYI
>< BsiLI
>< ApyI
>< BsrI
>< DsaV>< AfaI > < HinfI>< PleI
GACCACCTGG TACTGGTAAG AGTCATTTTG CCATCGGACT TGCTCTCTAT TACCCATCTG CTCGCATAGT
17020      17030      17040      17050      17060      17070      17080

>< SfaNI
>< SphI
>< PaeI
>< NspI
>< NspHI
>< Bst1107I
>< AccI
GTATACGGCA TGCTCTCATG CAGCTGTTGA TGCCCTATGT GAAAAGGCAT TAAAAATATTT GCCCATAGAT
17090      17100      17110      17120      17130      17140      17150

>< PvuII
>< Psp5I
>< NspBII
>< Fnu4HI
>< NlaIII>< BspWI
>< AluI
>< BbvI
>< Tru9I
>< SspI
>< MseI

```

FIGURE 13.39

53/116

```

> < ThaI
>< ThaI
> < MvnI
>< MvnI >< ThaI
> < HinPII
>< HinPII
>< HinPII >< MvnI
> < Hin6I
>< Hin6I
> < HhaI
>< HhaI >< HhaI
> < CfoI
>< CfoI >< CfoI
> < BstUI
>< BstUI >< BstUI
>< BssHII
>< BspMI
> < Bsp50I
>< Bsp50I>< Bsp50I
>< TfiI
>< HinfI
>< Hin6I> < AccII
>< AccII >< AccII
> < EcoRI
RmaI >
MaeI >
AAATGTAGTA GAATCATACC TGC GCGTAGAGT GTTTTGATAA ATTCAAAGTG AATCAACAC
17160 17170 17180 17190 17200 17210 17220

>< Zsp2I
>< Ppu10I
>< NsiI
>< Mph1103I
>< EcoT22I
>< BsgI
> < AvaIII
>< DrdI
TAGAACAGTA TGTTTTCTGC ACTGTAAATG CATTGCCAGA AACAACTGCT GACATTGTAG TCTTTGATGA
17230 17240 17250 17260 17270 17280 17290

>< RmaI
>< MaeI
>< MaeII
AATCTCTATG GCTACTAATT ATGACTTGAG TGTTGTCAAT GCTAGACTTC GTGCAAAACA CTACGTCTAT
17300 17310 17320 17330 17340 17350 17360

>< Sau3AI
>< NdeII
>< MboI
>< DpnII
>< DpnI
>< BspAI
>< AlwI>< Bsp143I
> < AciI
>< RmaI
>< MaeI SspI ><
ATTGGCGATC CTGCTCAATT ACCAGCCCC CGCACATTGC TGACTAAAGG CACACTAGAA CCAGAATATT
17370 17380 17390 17400 17410 17420 17430

>< SniI
>< Sau96I
>< NspIV
>< NspHII >< StyI
>< Eco47I >< NspHI
>< Cfr13I >< NlaIII
>< Bsi2I >< EcoT14I
>< BsgI >< Eco130I
>< Bme18I >< BssT1I
>< AvaII >< BsaJI
>< AsuI> < AflIII
>< Tru9I
>< MseI
TTAATTCAGT GTGCAGACTT ATGAAAACAA TAGGTCCAGA CATGTTCCCTT GGAAGTTGTC GCCGTTGTCC
17440 17450 17460 17470 17480 17490 17500

```

FIGURE 13. 40

```

      >< HindII
      >< HincII
      >< AluI
TGCTGAAATT GTTGACACTG TGAGTGCTTT AGTTTATGAC AATAAGCTAA AAGCACACAA GGATAAGTCA
  17510      17520      17530      17540      17550      17560      17570

>< AluI
GCTCAATGCT TCAAAATGTT CTACAAAGGT GTTATTACAC ATGATGTTTC ATCTGCAATC AACAGACCTC
  17580      17590      17600      17610      17620      17630      17640

      >< NlaIII

      >< MnlI
>< EcoNI
  >< BslI
  >< BsiYI
AAATAGGCGT TGTAAGAGAA TTTCTTACAC GCAATCCTGC TTGGAGAAAA GCTGTTTTTA TCTCACCTTA
  17650      17660      17670      17680      17690      17700      17710

      >< HphI
      >< AluI
      >< SfcI
      >< DdeI
      >< TfiI
      >< BfrI
      >< HinfI
TAATTCACAG AACGCTGTAG CTTCAAAAAT CTTAGGATTG CCTACGCAGA CTGTTGATTC ATCACAGGGT
  17720      17730      17740      17750      17760      17770      17780

      >< Tth111I
      >< AspI
      >< HindII
      >< HincII
      >< AciI
TCTGAATATG ACTATGTCAT ATTCACACAA ACTACTGAAA CAGCACACTC TTGTAATGTC AACCGCTTCA
  17790      17800      17810      17820      17830      17840      17850

      >< XhoII
      >< Sau3AI
      >< NdeII
      >< MflI
      >< MboI
      >< MamI
      >< DpnII
      >< DpnI
      >< BstYI
      >< BspAI
      >< Bsp143I
      >< BsiBI
      >< BsaBI
      >< BglII
      >< BspWI
ATGTGGCTAT CACAAGGGCA AAAATTGGCA TTTTGTGCAT AATGTCTGAT AGAGATCTTT ATGACAAACT
  17860      17870      17880      17890      17900      17910      17920

      >< XbaI
      >< RmaI
      >< MaeI
      >< MaeII
      >< MaeIII
      >< BsrI
GCAATTTACA AGTCTAGAAA TACCACGTCG CAATGTGGCT ACATTACAAG CAGAAAATGT AACTGGACTT
  17930      17940      17950      17960      17970      17980      17990

      >< Sau3AI
      >< NdeII
      >< MboII
      >< MboI
      >< FokI
      >< DpnII
      >< DpnI
      >< BspAI
      >< Bsp143I
      >< BbsI
      >< BsrI
      >< NlaIV
      >< Eco64I
      >< BscBI
      >< BanI
      >< AccBI
      >< MnlI
      >< DdeI
      >< Tru9I
      >< MseI>< SfcI
      >< BbsI >< BsrI
      >< AccBI
      >< DdeI

```

FIGURE 13. 41

FIGURE 13.42

TGTTGACACT	GAAAATAACA	CAGAATTCAC	CAGAGTTAAT	GCAAAACCTC	CACCAGGTGA	CCAGTTTAAA
18350	18360	18370	18380	18390	18400	18410

```
>< ScrFI
>< MvaI
>< EcoRII
>< Ecl136I
>< DsaV
>< BstOI
>< BstNI
>< BsiLI
>< BsaJI
>< ApyI
>< Tru9I
>< MseI
>< RsaI
>< DdeI
>< Csp6I
>< AfaI
```

CATCTTATAC	CACTCATGTA	TAAAGGCTTG	CCCTGGAATG	TAGTGCGTAT	TAAGATAGTA	CAAATGCTCA
18420	18430	18440	18450	18460	18470	18480

```
>< NlaIII  
          >< HinPII  
                >< TthlII  
            >< HinfI      >< HhaI  
        >< AspI           >< PleI       >< CfoI     >< AluI  
GTGATACACT GAAAGGATTG TCAGACAGAG TCGTGTTCGT CCTTTGGGCG CATGGCTTTG AGCTTACATC  
    18490         18500             18510              18520               18530                 18540                  18550
```

```

>< SinI
>< Sau96I
>< NspIV
>< NspHII
>< Eco47I
>< Cfr13I
>< ScaI
>< RsaI
>< Csp6I
>< AfaI
>< BsiZI
>< Bme18I
>< AvaII
>< MaeII
>< AsuI
>< AflIII
>< MaeIII>< MaeII
AATGAAGTAC TTTGTCAAGA TTGGACGTGA AAGAACGTGT TGTCTGTGTG ACAAACGTGC AACTTGCTTT
18560 18570 18580 18590 18600 18610 18620

```

> < TfiI
 > < HinfI
 > < Tth111I
 > < AspI
 TCTACTTCAT CAGATACTTA TGCCTGCTGG AATCATTCTG TGGGTTTTGA CTATGTCTAT AACCCATTTA
 18630 18640 18650 18660 18670 18680 18690

```

>> ScrFI
RsaI >>
>> MvaI
>> EcoRII
Ecl136I >>
>> DsaV
Csp6I >>
BstXI >>
>> BstOI
>> BstNI
>> BsiLI
>> ApyI

```

	>> Eco57I>	< BstEII	>> MaeIII	>> NlaIII	AfaI >>	
TGATTGATGT TCAGCAGTGG GGCTTTACGG GTAACCTTCA GAGTAACCAT GACCAACATT GCCAGGTACA						
18700	18710	18720	18730	18740	18750	18760

```
>< SfaNI
    >< RmaI
>< NspI
>< NspHI
```

FIGURE 13.43


```

      >< NlaIII      >< RmaI
      >< MaeI      >< NlaIII      Tru9I ><
>< NlaIII      >< BspWI      >< MaeI      >< NlaIII
      >< AflIII      >< BspHI      MseI ><
TGGAAATGCA CATGTGGCTA GTTGTGATGC TATCATGACT AGATGTTTAG CAGTCCATGA GTGCTTTGTT
18770      18780      18790      18800      18810      18820      18830

>< ThaI
>< MvnI
>< HinPII
>< Hin6I
>< HhaI
>< CfoI
>< BstUI
>< Bsp50I
>< AccII
AAGCGCGTTG ATTGGTCTGT TGAATACCCT ATTATAGGAG ATGAACTGAG GGTTAATTCT GCTTGCAGAA
18840      18850      18860      18870      18880      18890      18900

>< RsaI
>< Csp6I
>< AfaI      >< NlaIII      >< BspWI      >< MboII      >< NlaIII
AAGTACAACA CATGGTTGTG AAGTCTGCAT TGCTTGCTGA TAAGTTTCCA GTTCTTCATG ACATTGGAAA
18910      18920      18930      18940      18950      18960      18970

      >< SauI
      >< MstII
      >< Eco8II
      >< DdeI      NlaIII ><
      >< CvnI      >< EspI
      >< Bsu36I      >< Eco57I MaeIII ><
      >< Bse2II      >< DdeI
      >< AxyI      >< CelII
      >< AocI      >< MnlI      >< SfaNI      >< Bpu1102I
TCCAAAGGCT ATCAAGTGTG TGCCTCAGGC TGAAGTAGAA TGGAAGTTCT ACGATGCTCA GCCATGTAGT
18980      18990      19000      19010      19020      19030      19040

      >< MnlI      >< Ksp632I
      >< HindIII      >< EarI
      >< AluI      >< MboII      >< Eam1104I
GACAAAGCTT ACAAATAGA GGAACCTCTC TATTCTTATG CTACACATCA CGATAAATTC ACTGATGGTG
19050      19060      19070      19080      19090      19100      19110

      >< Sau3AI
      >< NdeII
      >< MboI
      >< MaeII> < MaeIII
      >< DpnII
      >< DpnI
      >< BspAI
      >< MaeIII >< Bsp143I      >< MunI      HinfI >
TTTGTGTTGTT TTGGAATTGT AACGTTGATC GTTACCCAGC CAATGCAATT GTGTGTAGGT TTGACACAAG
19120      19130      19140      19150      19160      19170      19180

      >< ScrFI
      >< MvaI
      >< EcoRII
      >< Zsp2I ><
      >< SphI
      >< Ppu10I
      >< PaeI
      >< NspI
      >< NspHI
      >< NlaIII
      Mph1103I ><

```

FIGURE 1344

58/116.

```

                >< Ecl136I
                >< DsaV
                >< BstOI
                >< BstNI
                >< BsiLI
                >< ApyI
                >< PleI
AGTCTTGTC AACTTGAAC TACCAGGCTG TGATGGTGGT AGTTTGTATG TGAATAAGCA TGCATTCCAC
19190      19200      19210      19220      19230      19240      19250

                >< Tru9I
                > < MunI
                >< TthHB8I
                >< MseI
>< BcgI/a >< TaqI
                >< DraI
                >< BcgI
                >< AluI
ACTCCAGCTT TCGATAAAAG TGCATTTACT AATTTAAAGC AATTGCCTTT CTTTACTAT TCTGATAGTC
19260      19270      19280      19290      19300      19310      19320

                >< PleI
                >< NlaIII
                >< BsmAI
                >< HinfI>< Alw26I
                SfaNI ><
                >< MaeII
                BsaAI ><
                AflIII ><
CTTGTGAGTC TCATGGCAAA CAAGTAGTGT CGGATATTGA TTATGTTCCA CTCAAATCTG CTAGGTGTAT
19330      19340      19350      19360      19370      19380      19390

                Zsp2I >
                >< ScaI
                Ppu10I ><
                >< RsaINsiI >
                Mph1103I >
                >< SfaNEcoT22I >
                > < RsaI >< Csp6I
                >< Csp6I
                >< NlaIII> < AfaI >< AfaI
                >< AvaIII ><
TACACGATGC AATTTAGGTG GTGCTGTTTG CAGACACCAT GCAAATGAGT ACCGACAGTA CTTGGATGCA
19400      19410      19420      19430      19440      19450      19460

                >< FokI
TATAATATGA TGATTTCTGC TGGATTTAGC CTATGGATTT ACAAACAATT TGATACTTAT AACCTGTGGA
19470      19480      19490      19500      19510      19520      19530

                >< ScrFI
                >< MvaI
                >< MaeIII
                >< EcoRII
                >< Ecl136I
                >< DsaV
                >< BstOI
                >< BstNI
                >< BsiLI
                >< ApyI
                >< Tru9I
                >< MseI
ATACATTTAC CAGGTTACAG AGTTTAGAAA ATGTGGCTTA TAATGTTGTT AATAAAGGAC ACTTTGATGG
19540      19550      19560      19570      19580      19590      19600

                >< SgrAI
                >< NaeI
                >< MspI
                > < VspI
                >< HpaII
                > < Tru9I
                >< HapII
                > < MseI
                >< Cfr10I
                > < AsnI
                >< BspWI
                > < AseI
ACACGCCGGC GAAGCACCTG TTTCCATCAT TAATAATGCT GTTTACACAA AGGTAGATGG TATTGATGTG
19610      19620      19630      19640      19650      19660      19670

```

FIGURE 13. 45

```

>< XhoII
>< Sau3AI
>< NdeII
>< MflI
>< MboI
>< DpnII
  >< DpnI
>< BstYI
>< BspAI
  >< BspI43I
>< BglII
GAGATCTTTG AAAATAAGAC AACACTTCCT GTTAATGTTG CATTGAGCT TTGGGCTAAG CGTAACATTA
19680      19690      19700      19710      19720      19730      19740

                                >< MaeIII
                                >< EspI
                                >< DdeI Tru9I ><
                                >< CeliIMseI ><
                                >< BpuII02I
                                >< Fnu4HI
                                >< EcoRV
                                >< Eco32I
  >< BsrI      >< Tru9I      >< MseI      >< BbvI
AACCAGTGCC AGAGATTAAG ATACTCAATA ATTTGGGTGT TGATATCGCT GCTAATACTG TAATCTGGGA
19750      19760      19770      19780      19790      19800      19810

                                >< NspI
                                >< NspHI
                                >< NlaIII
                                >< BsgI
                                >< AflIII
CTACAAAAGA GAAGCCCCAG CACATGTATC TACAATAGGT GTCTGCACAA TGA CTGACAT TGCCAAGAAA
19820      19830      19840      19850      19860      19870      19880

  >< DdeI>< MboII
CCTACTGAGA GTGCTTGTTT TTCACCTACT GTCTTGTTTG ATGGTAGAGT GGAAGGACAG GTAGACCTTT
19890      19900      19910      19920      19930      19940      19950

                                SinI ><
                                Sau96I ><
                                NspIV ><
                                NspHII ><
                                NlaIV ><
                                Eco47I ><
                                CfrI13I ><
                                >< BslI
                                BsiZI ><
                                >< BsiYI
                                BscBI ><
                                Bmel8I ><
                                AvaII ><
                                AsuI ><
                                >< Tru9I
                                >< MseI
TTAGAAACGC CCGTAATGGT GTTTTAATAA CAGAAGGTTT AGTCAAAGGT CTAACACCTT CAAAGGGACC
19960      19970      19980      19990      20000      20010      20020

                                >< VspI
                                >< Tru9I
                                >< PleI
                                >< MseI
  >< RmaI
  >< NheI      >< MaeIII
  >< MaeI      >< AsnI      >< TfiI
>< HgaI>< AluI      >< HinfI>< AseI      >< HinfI
AGCACAAAGCT AGCGTCAATG GAGTCACATT AATTGGAGAA TCAGTAAAAA CACAGTTTAA CTACTTTAAG
20030      20040      20050      20060      20070      20080      20090

                                >< DdeI      >< MnlI      Tru9I ><
                                >< BsmAI      >< DdeI

```

FIGURE 1346

```

>< AccI                               >< Alw26I >< BfrIMseI ><
AAAGTAGACG GCATTATTCA ACAGTTGCCT GAAACCTACT TTA CTCAGAG CAGAGACTTA GAGGATTTTA
20100      20110      20120      20130      20140      20150      20160

>< TthHB8I
>< TaqI
>< SstI
>< SduI
>< SacI
> < PaeR7I
> < NspIII
>< NspII
>< HgiAI
> < Eco88I
> < XhoI>< Eco24I
>< Ecl136II
>< SlaI>< Bsp1286I
> < CcrI>< BmyI
> < BcoI>< BanII
> < Ama87I
> < AvaI>< Alw21I
>< BspAI
>< Bsp143I
>< AluI
>< EcoRI
>< FokIAluI ><
AGCCCAGATC ACAAATGGAA ACTGACTTTC TCGAGCTCGC TATGGATGAA TTCATACAGC GATATAAGCT
20170      20180      20190      20200      20210      20220      20230

>< TthHB8I
>< TaqI
>< SfuI
>< NspV
>< LspI
>< Csp45I
>< BstBI
>< Bsp119I
>< BsiCI
>< Bpu14I
>< AsuII >< BcgI
>< MboII
>< BbsI
>< Tru9I ><
>< NlaIII >< AciIMseI ><
CGAGGGCTAT GCCTTCGAAC ACATCGTTTA TGGAGATTTC AGTCATGGAC AACTTGGCGG TCTTCATTTA
20240      20250      20260      20270      20280      20290      20300

>< HphI
>< HinPII
>< Hin6I
>< EspI > < HhaI >< TfiI
>< DdeI >< HaeII
>< CelII >< Eco47III >< Tru9I
>< Bpu1102I > < CfoI >< HinfI >< MseI
>< BfrI >< Bsp143II >< MnlI
ATGATAGGCT TAGCCAAGCG CTCACAAGAT TCACCACTTA AATTAGAGGA TTTTATCCCT ATGGACAGCA
20310      20320      20330      20340      20350      20360      20370

>< MstI
>< HinPII
>< Hin6I
>< HhaI
>< FspI
>< FdiII
>< CfoI
>< SfaNI
>< AviII
>< Sau3AI ><
>< NdeII ><
>< MboI ><
>< DpnII ><
>< DpnI ><
>< BspAI ><
>< Bsp143I ><
CAGTGAAAAA TTA CTTCATA ACAGATGCGC AAACAGGTTC ATCAAAATGT GTGTGTTCTG TGATTGATCT
20380      20390      20400      20410      20420      20430      20440

>< TthHB8I

```

FIGURE 13.47

61/116

```

>< Tth111I
>< TaqI
>< AspI > < MaeIII MaeIII ><
TTTACTTGAT GACTTTGTCTG AGATAATAAA GTCACAAGAT TTGTCAGTGA TTTCAAAAGT GGTCAAGGTT
20450 20460 20470 20480 20490 20500 20510

>< NspI
>< NspHI
>< NlaIII
>< FokI

>< MunI > < NlaIII >< AflIII
ACAATTGACT ATGCTGAAAT TTCATTCATG CTTTGGTGTG AGGATGGACA TGTTGAAACC TTCTACCCAA
20520 20530 20540 20550 20560 20570 20580

>< SfaNI
>< ScrFI
>< MvaI
>< EcoRII
>< Ecl136I
>< DsaV
>< BstOI >< SfaNI
>< BstNI >< RsaI BspWI ><
>< BsiLI > < Csp6I BsmI >
>< ApyI >< AfaI BscCI ><
AACTACAAGC AAGTCAAGCG TGGCAACCAG GTGTTGCGAT GCCTAACTTG TACAAGATGC AAAGAATGCT
20590 20600 20610 20620 20630 20640 20650

>< Eco57I >< MaeIII >< HphI
TCTTGAAAAG TGTGACCTTC AGAATTATGG TGAAAATGCT GTTATACCAA AAGGAATAAT GATGAATGTC
20660 20670 20680 20690 20700 20710 20720

> < RsaI
>< Csp6I
>< Bst1107I >< Tru9I >< AluI
>< AccI >< MseI > < AfaINlaIII ><
GCAAAGTATA CTCAACTGTG TCAATACTTA AATACACTTA CTTTAGCTGT ACCCTACAAC ATGAGAGTTA
20730 20740 20750 20760 20770 20780 20790

>< ScrFI
>< RsaI
>< MvaI
>< EcoRII >< NspBII
>< Ecl136I >< SduI
> < Csp6I >< NspII
>< BstOI >< PvuII>< HgiAI
>< BstNI >< DdeI
>< BsiLI >< Psp5I>< Bsp1286I
>< ApyI >< AluI >< BmyI
>< DsaV>< AfaI >< Alw21I
TTCACTTTGG TGCTGGCTCT GATAAAGGAG TTGCACCAGG TACAGCTGTG CTCAGACAAT GGTTGCCAAC
20800 20810 20820 20830 20840 20850 20860

>< XhoII
>< Tru9I
>< Sau3AI
>< NdeII
>< TthHB8I >< MseI
>< MflI
>< MboI
>< MamI
>< DpnII
>< TfiI >< DpnI

```

FIGURE 13. 48

```

      >< BstYI          > < TfiI
      >< BspAI          > < HinfI
    >< HinfI>< Bsp143I    >< Esp3I      >< Tru9I
      >< BsiBI          >< Tth111I    >< BsmBI      >< MseI
      >< BsaBI          >< BsmAI      > < BsmAI
    >< BsrI      >< TaqI >< BglII    >< AspI      >< Alw26I    >< HgaI> < Alw26I
TGGCACACTA CTTGTCGATT CAGATCTTAA TGACTTCGTC TCCGACGCAG ATTCTACTTT AATTGGAGAC
    20870      20880      20890      20900      20910      20920      20930

      >< StyI
      >< SinI
      >< Sau96I
    > < SinI
    > < Sau96I
      >< PssI
      >< Psp5II
    > < PpuMI
    > < NspIV
      >< NspHII
      >< NlaIV
    > < EcoO109I
    > < Eco47I
    > < DraII
    > < Cfr13I
    > < BsiZI
      >< BscBI
      > < Bme18I
    > < AvaII
    > < AsuI
    >< RsaI
    > < Csp6I
    >< AfaI
      >< Bme18I
      > < AvaII
      > < AsuI
      >< Bme18I
      >< BsiZI
      >< BlnI
      >< AvrII
      >< AvaII
      >< AsuI
      >< AflIII ><
TGTGCAACAG TACATACGGC TAATAAATGG GACCTTATTA TTAGCGATAT GTATGACCCT AGGACCAAAC
    20940      20950      20960      20970      20980      20990      21000

    >< NspI
    >< NspHI
    >< NlaIII >< PleI
    >< MaeIII      >< HinfI
ATGTGACAAA AGAGAATGAC TCTAAAGAAG GGTTTTTCAC TTATCTGTGT GGATTTATAA AGCAAAAAC
    21010      21020      21030      21040      21050      21060      21070

    >< ScrFI
    >< MvaI
    >< EcoRII
    >< Ecl136I
    >< DsaV
    >< BstOI
    >< BstNI
    >< BsiLI
    >< BsaJI
    >< BsaJI      >< SfcI
    >< ApyI      > < AluI
    >< BscCI
    >< BscCI
    >< BscCIHindIII ><> < AluI
AGCCCTGGGT GGTCTATAG CTGTAAAGAT AACAGAGCAT TCTTGGAATG CTGACCTTTA CAAGCTTATG
    21080      21090      21100      21110      21120      21130      21140

      >< Zsp2I
    >< Ppu10I
      >< NsiI
      >< Mph1103I    Tru9I ><
      >< EcoT22I      >< MseI
    >< BshI      >< NlaIII>< AluI    >< BcgI      >< AvaIII >< 'SfaNIBcgI/a ><
GGCCATTCT CATGGTGGAC AGCTTTTGTG ACAAATGTAA ATGCATCATC ATCGGAAGCA TTTTAAATTG
    21150      21160      21170      21180      21190      21200      21210

```

FIGURE 13.49

```

                                >< Zsp2I
                                >< SphI
                                >< Ppu10I
                                >< PaeI
                                >< NspI
                                >< NspHI
                                >< NsiI
                                >< NlaIII
                                > < NlaIII
                                >< Mph1103I
                                >< EcoT22I
                                > < AvaIII >< MnlI
GGGCTAACTA TCTTGGCAAG CCGAAGGAAC AAATTGATGG CTATACCATG CATGCTAACT ACATTTTCTG
  21220      21230      21240      21250      21260      21270      21280

                                >< MboII
                                >< GsuI
                                >< BsrI
                                >< BpmI
                                >< BbsI
                                >< NlaIII
                                >< MnlI
GAGGAACACA AATCCTATCC AGTTGTCTTC CTATTCATC TTTGACATGA GCAAATTTCC TCTTAAATTA
  21290      21300      21310      21320      21330      21340      21350

                                >< Tru9I
                                >< MseI
                                >< Esp4I> < TfiI
                                >< BsmAI
                                >< Alw26I
                                >< AflII> < HinfI
                                >< MboII >< EarI
                                >< Eam1104I ><
AGAGGAACTG CTGTAATGTC TCTTAAGGAG AATCAAATCA ATGATATGAT TTATTCTCTT CTGGAAAAAG
  21360      21370      21380      21390      21400      21410      21420

                                >< Tru9I
                                >< MseI
                                >< HindII
                                >< HincII
                                >< HpaI AflIII >
GTAGGCTTAT CATTAGAGAA AACAACAGAG TTGTGGTTTC AAGTGATATT CTTGTTAACA ACTAAACGAA
  21430      21440      21450      21460      21470      21480      21490

                                >< VneI
                                >< SnoI
                                >< SduI
                                >< NspII
                                >< HpaII
                                >< HgiAI
                                >< HapII
                                >< Cfr10I
                                >< Bsp1286I
                                >< MspI>< BmyI
                                >< ApaLI
                                >< Alw44I
                                >< AgeI >< Alw21I
                                >< SpeI
                                >< RmaI
                                >< MaeI >< MaeIII >< AgeI >< Alw21I
CATGTTTATT TTCTTATTAT TTCTTACTCT CACTAGTGGT AGTGACCTTG ACCGGTGCAC CACTTTTGTG
  21500      21510      21520      21530      21540      21550      21560

                                > < AluI
                                >< MnlI
GATGTTCAAG CTCCTAATTA CACTCAACAT ACTTCATCTA TGAGGGGGGT TTAATATCCT GATGAAATTT
  21570      21580      21590      21600      21610      21620      21630

                                >< Sau3AI

```

FIGURE 13. 50

```

>< NdeII
>< MboI
>< DpnII
  >< DpnI          >< Tru9I
>< BspAI          >< MseI > < MboII
  >< Bsp143I       >< DdeI          >< MaeIII
TTAGATCAGA CACTCTTTAT TTAAGTCAGG ATTTATTTCT TCCATTTTAT TCTAATGTTA CAGGGTTTCA
  21640      21650      21660      21670      21680      21690      21700

>< VspI
>< Tru9I
>< MseI
>< AsnI          >< Tru9I          >< FokI
>< AseI >< MaeII  >< MseI >< BbvI          > < Fnu4HI
TACTATTAAT CATACGTTTG GCAACCCTGT CATACCTTTT AAGGATGGTA TTTATTTTGC TGCCACAGAG
  21710      21720      21730      21740      21750      21760      21770

          >< BslI
          >< DsaI>< BsiYI          >< NlaIII
          >< BsaJI          > < MaeIII
AAATCAAATG TTGTCCGTGG TTGGGTTTTT GGTTCACCA TGAACAACAA GTCACAGTGG GTGATTATTA
  21780      21790      21800      21810      21820      21830      21840

          >< NspI
          >< NspHI
          >< NlaIII
          >< MaeIII          >< MaeIII
TTAACAATTC TACTAATGTT GTTATACGAG CATGTAACCT TGAATTGTGT GACAACCCTT TCTTTGCTGT
  21850      21860      21870      21880      21890      21900      21910

  >< StyI          >< Zsp2I
    >< NlaIII          >< Tru9I
>< NcoI >< RsaI          >< Ppu10I TthHB8I ><
>< EcoT14I          >< NsiI          >< TaqI
>< Eco130I          >< MseI          SfaNI ><
>< DsaI>< Csp6I          >< Mph1103I RsaI ><
>< BssTII          >< TthHB8I >< EcoT22I Csp6I ><
>< BsaJI>< AfaI          >< TaqI >< AvalI AfaI ><
TTCTAAACCC ATGGGTACAC AGACACATAC TATGATATTC GATAATGCAT TTAATTGCAC TTTCGAGTAC
  21920      21930      21940      21950      21960      21970      21980

          >< Tru9I
          >< MseI
          >< DraI
ATATCTGATG CCTTTTCGCT TGATGTTTCA GAAAAGTCAG GTAATTTTAA ACACCTTACGA GAGTTTGTGT
  21990      22000      22010      22020      22030      22040      22050

          >< Sau3AI
          >< NdeII
          >< MboI
          >< DpnII
          >< DpnI
          >< BspAI
>< Tru9I          >< SfcI Bsp143I ><
>< MseI
>< DraI
TTAAAAATAA AGATGGGTTT CTCTATGTTT ATAAGGGCTA TCAACCTATA GATGTAGTTC GTGATCTACC
  22060      22070      22080      22090      22100      22110      22120

          >< Tru9I
          > < Tru9I          >< MseI
          >< MseI          > < MseI          >< MnlI
TTCTGGTTTT AACACTTTGA AACCTATTTT TAAGTTGCCT CTTGGTATTA ACATTACAAA TTTTAGAGCC
  22130      22140      22150      22160      22170      22180      22190

```

FIGURE 13.51

65/116

```

> < SduI>< SfcI
>< PvuII
>< Psp5I
> < NspII
>< NspBII
> < MaeII > < Fnu4HI
> < Bsp1286I >< PstI          Tru9I >
> < BmyI>< Fnu4HI          MseI >
>< HphI          >< BspMI          >< BbvI          >< BbvI
ATTCTTACAG CCTTTTCACC TGCTCAAGAC ATTTGGGGCA CGTCAGCTGC AGCCTATTTT GTTGGCTATT
22200      22210      22220      22230      22240      22250      22260

>< SfaNI
>< RsaI
> < Csp6I
>< DraI          >< AfaI          >< AlwNI
TAAAGCCAAC TACATTTATG CTCAAGTATG ATGAAAATGG TACAATCACA GATGCTGTTG ATTGTTCTCA
22270      22280      22290      22300      22310      22320      22330

> < Tru9I
> < MseI
>< AluI
AAATCCACTT GCTGAACTCA AATGCTCTGT TAAGAGCTTT GAGATTGACA AAGGAATTTA CCAGACCTCT
22340      22350      22360      22370      22380      22390      22400

>< SauI
>< MstII
>< Eco81I
>< DdeI
>< CvnI
>< Bsu36I
>< Bse21I
>< AxyI
>< MnlI          >< AocI          >< MnlI          >< TfiI          >< SspI          >< MnlI
AATTTTCAGGG TTGTTCCCTC AGGAGATGTT GTGAGATTCC CTAATATTAC AAACCTTGTTG CCTTTTGGAG
22410      22420      22430      22440      22450      22460      22470

>< Zsp2I
>< Ppu10I
>< NsiI
> < NlaIII
>< Mph1103I
>< EcoT22I
>< Tru9I          >< AvaIII
>< MseI
AGGTTTTTAA TGCTACTAAA TTCCCTTCTG TCTATGCATG GGAGAGAAAA AAAATTTCTA ATTGTGTTGC
22480      22490      22500      22510      22520      22530      22540

>< SduI
>< NspII
>< HgiAI
>< Bsp1286I
>< BmyI          >< Tru9I
>< Alw21I          >< MseI          DdeI ><
TGATTACTCT GTGCTCTACA ACTCAACATT TTTTTCACC TTAAAGTGCT ATGGCGTTTC TGCCACTAAG
22550      22560      22570      22580      22590      22600      22610

>< Sau3AI
>< NdeII
>< MboI
>< DpnII
>< DpnI

```

FIGURE 13.52

```

    >< BspAI
    >< Bsp143I
    TTGAATGATC TTTGCTTCTC CAATGTCTAT GCAGATTCTT TTGTAGTCAA GGGAGATGAT GTAAGACAAA
    22620      22630      22640      22650      22660      22670      22680

    >< ScrFI
    >< MvaI
    >< HinPII
    >< Hin6I
    >< HhaI
    >< HaeII
    >< EcoRII
    >< Ecl136I
    >< DsaV
    >< CfoI
    >< BstOI
    >< BstNI
    >< Bsp143II
    >< BsiLI
    >< ApyI      > < BsrI
    TAGCGCCAGG ACAAACTGGT GTTATTGCTG ATTATAATTA TAAATTGCCA GATGATTTCa TGGGTTGTGT
    22690      22700      22710      22720      22730      22740      22750

    >< SfaNI
    >< RmaI
    >< MaeI
    CCTTGCTTGG AATACTAGGA ACATTGATGC TACTTCAACT GGTAATTATA ATTATAAATA TAGGTATCTT
    22760      22770      22780      22790      22800      22810      22820

    >< Sau96I
    >< Pali
    >< NspIV
    > < HindIII
    >< HaeIII
    >< Eco109I
    >< DraII
    >< DdeI
    >< Cfr13I
    >< BsuRI
    >< BsiZI
    >< BshI
    >< BfrI >< PssI
    >< NlaIII >< AsuI>< BsmAI
    >< AluI >< Alw26I
    AGACATGGCA AGCTTAGGCC CTTTGAGAGA GACATATCTA ATGTGCCTTT CTCGCCTGAT GGCAAACCTT
    22830      22840      22850      22860      22870      22880      22890

    >< Tru9I
    >< Pali
    >< MscI
    >< HaeIII
    >< EaeI>< MseI
    >< Tru9I >< BsuRI
    >< MseI >< BshI
    >< BspMI >< BalI
    GCACCCACCC TGCTCTTAAT TGTTATTGGC CATTAAATGA TTATGGTTTT TACACCACTA CTGGCATTGG
    22900      22910      22920      22930      22940      22950      22960

    Sau96I ><
    >< PalINspIV ><
    > < MspI NspHII ><
    >< HaeIII

```

FIGURE 13.53


```

>< BspWI                >< Hin6I
    >< BspAI                > < HhaI                PleI ><
>< SfcI                >< Bsp143I        >< AluI> < CfoI                >< BsrI
CTACAGCAAT TCATGCAGAT CAACTCACAC CAGCTTGGCG CATATATTCT ACTGGAAACA ATGTATTCCA
    23320      23330      23340      23350      23360      23370      23380

                                >< TthHB8I
                                >< TaqI
                                >< SalI
                                >< RtrI
                                >< NspI
                                >< EspI >< NspHI
                                >< DdeI >< NlaIII
                                >< CelII >< HindII
                                >< Bpu102I>< HincII
>< HinfI                >< AluI        >< AccI
GACTCAAGCA GGCTGTCTTA TAGGAGCTGA GCATGTCGAC ACTTCTTATG AGTGCGACAT TCCTATTGGA
    23390      23400      23410      23420      23430      23440      23450

                                > < SnaBI
                                >< ScaI
                                >< RsaI
                                >< RmaI
                                >< MaeII >< MaeI
                                > < Eco105I
                                >< Csp6I
                                > < BsaAI
                                >< AfaI
>< AluI                >< MaeI                >< AfaI
GCTGGCATTG GTGCTAGTTA CCATACAGTT TCTTTATTAC GTAGTACTAG CCAAAAATCT ATTGTGGCTT
    23460      23470      23480      23490      23500      23510      23520

                                >< MniI
ATACTATGTC TTTAGGTGCT GATAGTTCAA TTGCTTACTC TAATAACACC ATTGCTATAC CTACTAACTT
    23530      23540      23550      23560      23570      23580      23590

                                RsaI ><
                                >< MnlI
                                Csp6I ><
                                AfaI ><
>< SfcI
TTCAATTAGC ATTACTACAG AAGTAATGCC TGTTTCTATG GCTAAAACCT CCGTAGATTG TAATATGTAC
    23600      23610      23620      23630      23640      23650      23660

    > < TfiI
    > < HinfI
    >< AciI
ATCTGCGGAG ATTCTACTGA ATGTGCTAAT TTGCTTCTCC AATATGGTAG CTTTTCGACA CAACTAAATC
    23670      23680      23690      23700      23710      23720      23730

>< VneI
    >< SduI
    >< NspII
    >< HgiAI
>< SnoI>< DdeI                >< PmlI
    >< Bsp1286I                >< PmaCI
    >< BmyI                    >< MaeII
    >< BbvI                    >< Eco72I
    >< DpnI                    >< BsaAI
    >< Bsp143I >< BbrPI
>< ApaLI
    >< DpnII >< AlwI
>< Alw44I
    >< Alw21I >< Fnu4HI >< BspAI >< AflIII
GTGCACTCTC AGGTATTGCT GCTGAACAGG ATCGCAACAC ACGTGAAGTG TCGCTCAAG TCAAACAAAT
    23740      23750      23760      23770      23780      23790      23800

```

FIGURE 13.55

```

>< RsaI
>< Csp6I
>< AfaI
GTACAAAACC CCAACTTTGA AATATTTTGG TGGTTTAAAT TTTTCACAAA TATTACCTGA CCCTCTAAAG
23810      23820      23830      23840      23850      23860      23870

>< MnlI
>< MnlI
>< DdeI >< MnlI
CCAATAAGA GGTCTTTTAT TGAGGACTTG CTCTTTAATA AGGTGACACT CGCTGATGCT GGCTTCATGA
23880      23890      23900      23910      23920      23930      23940

>< XhoII
>< Sau3AI
>< StyI
>< RmaI
>< MaeI
>< EcoT14I
>< Eco130I
>< BssT1I
>< BsmI
>< BscCI
>< BsaJI
>< BlnI
>< AvrII
AGCAATATGG CGAATGCCTA GGTGATATTA ATGCTAGAGA TCTCATTGTG GCGCAGAAAGT TCAATGGACT
23950      23960      23970      23980      23990      24000      24010

>< RmaIRsaI ><
>< MnlI >< Fnu4HI >< Fnu4HI Csp6I ><
>< BspWI >< BbvI >< BbvI >< BspWI >< MaeIAfaI ><
TACAGTGTG CCACCTCTGC TCACTGATGA TATGATTGCT GCCTACACTG CTGCTCTAGT TAGTGGTACT
24020      24030      24040      24050      24060      24070      24080

>< MboII
>< HinPII
>< Hin6I
>< HhaI
>< HaeII
>< Fnu4HI >< Ksp632I
>< CfoI >< EarI
>< FokI >< BspWI >< Eam1104I
>< BbvI >< Bsp143II
GCCACTGCTG GATGGACATT TGGTGCTGGC GCTGCTCTTC AAATACCTTT TGCTATGCAA ATGGCATATA
24090      24100      24110      24120      24130      24140      24150

>< MaeIII
>< Tru9I ><
>< MseI ><
GGTTCATGG CATTGGAGTT ACCCAAATG TTCTCTATGA GAACCAAAAA CAAATCGCCA ACCAATTTAA
24160      24170      24180      24190      24200      24210      24220

>< TfiI
>< HinfI
>< BbvI
>< AluI
CAAGGCGATT AGTCAAATTC AAGAATCACT TACAACAACA TCAACTGCAT TGGGCAAGCT GCAAGACGTT
24230      24240      24250      24260      24270      24280      24290

>< Tru9I
>< MseI
>< HpaI
>< HindII >< BsmI >< Tru9I >< Tru9I >< BfrI
>< HincII>< BscCI >< MseI >< MseI >< AluI

```

FIGURE 13. 56

```

GTTAACCAGA ATGCTCAAGC ATTAACACA CTTGTAAAC AACTTAGCTC TAATTTTGGT GCAATTTCAA
24300      24310      24320      24330      24340      24350      24360

      >< ThaI
      >< SpoI
      >< NruI
      >< MvnI
      >< BstUI      >< TthHB8I
      >< Bsp68I      >< TaqI      >< RsaI
      >< EcoRV >< Bsp50I      >< MnlI      >< Csp6I      >< Tru9I
      >< Eco32I >< AccII >< MnlI      >< AciI>< AfaI      >< MseI
GTGTGCTAAA TGATATCCTT TCGCGACTTG ATAAAGTCGA GCGCGAGGTA CAAATTGACA GGTAAATTAC
24370      24380      24390      24400      24410      24420      24430

      >< MaeIII >< BbvI      >< Fnu4HI      BbvI ><
AGGCAGACTT CAAAGCCTTC AAACCTATGT AACACAACAA CTAATCAGGG CTGCTGAAAT CAGGGCTTCT
24440      24450      24460      24470      24480      24490      24500

      >< Fnu4HI      >< HindII
      >< BspWI      >< DdeI      >< HincII
GCTAATCTTG CTGCTACTAA AATGTCTGAG TGTGTTCTTG GACAATCAAA AAGAGTTGAC TTTTGTGGAA
24510      24520      24530      24540      24550      24560      24570

      > < NspI
      > < NspHI
      > < NlaIII
      >< MaeIII
      >< NlaIII      >< MaeII
      >< MboII      >< FokI
      >< Fnu4HI >< BbsI      BsaAI ><
      >< AciI>< BbvI      >< AflIII
AGGGCTACCA CCTTATGTCC TTCCCAACAAG CAGCCCCGCA TGGTGTGTC TTCCTACATG TCACGTATGT
24580      24590      24600      24610      24620      24630      24640

      >< ScrFI
      >< MvaI
      >< EcoRII
      >< Ecl136I
      >< BstOI
      >< BstNI      >< HinPII
      >< MnlI >< BslI      >< Hin6I
      >< DsaV>< BsiYI      >< HhaI
      >< BsiLI      >< HaeII
      >< BsaJI>< HphI      >< CfoI      >< NlaIII
      >< ApyI      >< Bsp143II >< BspHI      EcoNI ><
GCCATCCCAG GAGAGGAAct TCACCACAGC GCCAGCAATT TGTCATGAAG GCAAAGCATA CTTCCCTCGT
24650      24660      24670      24680      24690      24700      24710

      >< MnlI
      >< BslI      >< Tru9I
      >< BsiYI      >< MseI      >< MnlI
GAAGGTGTTT TTGTGTTTAA TGGCACTTCT TGGTTTATTA CACAGAGGAA CTTCTTTTCT CCACAAATAA
24720      24730      24740      24750      24760      24770      24780

      >< DdeI      >< Tru9I
      >< BsmAI      >< SfaNI
      >< SfcI      >< Alw26I      >< MseIAlwI ><
TTACTACAGA CAATACATTT GTCTCAGGAA ATTGTGATGT CGTTATTGGC ATCATTAAAC ACACAGTTTA
24790      24800      24810      24820      24830      24840      24850

      >< Sau3AI
      >< NdeII

```

FIGURE 13.57

71/116

```

>< MboI          >< PfuI          > < ScaI
>< DpnII         >< MnlI          > < Ksp632I      > < RsaI
  >< DpnI         >< DdeI   >< HinfI          >< MboII
>< BspAI         >< BspWI         > < Eam1104I      >< Csp6I
  >< Bsp143I      >< AluI          > < EarI   > < AluI   > < AfaI   > < HphI
TGATCCTCTG CAACCTGAGC TTGACTCATT CAAAGAAGAG CTGGACAAGT ACTTCAAAAA TCATACATCA
24860      24870      24880      24890      24900      24910      24920

  >< Sau3AI
  >< NdeII
  >< MboI
>< MmI
  >< DpnII
  >< DpnI
  >< BspAI
  >< Bsp143I
  >< BsiBI          >< Tru9I          >< HindII
  >< BsaBI          >< MseI           >< HincII      AciI ><
CCAGATGTTG ATCTTGGCGA CATTTCAGGC ATTAACGCTT CTGTCGTCAA CATTCAAAAA GAAATTGACC
24930      24940      24950      24960      24970      24980      24990

  >< Tru9I
  > < TfiI
  >< MnlI          >< SmaI
  >< EcoNI         >< MseI
  >< BsiI          > < HinfI
>< MnlI>< BsiI    >< DraI
GCCTCAATGA GGTGCTGCTAAA AATTAAATG AATCACTCAT TGACCTCAA GAATTGGGAA AATATGAGCA
25000      25010      25020      25030      25040      25050      25060

  >< StyI
  >< PstI
  >< HaeIII
  >< EcoT14I
  >< Eco130I
  >< BsuRI
  >< BssTII
  >< Tru9I>< BshI          NlaIII ><
  >< MseI >< BsaJI          MaeIII ><
ATATATTAAA TGGCCTTGGT ATGTTTGGCT CGGCTTCATT GCTGGACTAA TTGCCATCGT CATGGTTACA
25070      25080      25090      25100      25110      25120      25130

  > < SphI
  > < PaeI
  >< SpeI          > < NspI
  > < RmaI        > < NspHI
  >< NlaIII       > < NlaIII
  > < MaeI        >< MnlI>< BbvI Fnu4HI ><
ATCTTGCTTT GTTGCATGAC TAGTTGTTGC AGTTGCCTCA AGGGTGCATG CTCTTGTTGGT TCTTGCTGCA
25140      25150      25160      25170      25180      25190      25200

  >< FokI
  >< DdeI
>< MnlI >< PfuI>< HinfI >< BsrI
AGTTTGATGA GGATGACTCT GAGCCAGTTC TCAAGGGTGT CAAATTACAT TACACATAAA CGAATTATG
25210      25220      25230      25240      25250      25260      25270

  >< Sau3AI
  >< NdeII
  >< MboI
  >< DpnII
  > < DpnI

```

FIGURE 13.58

72/116

```

>< BspAI
  > < Bsp143I
    >< BspI    >< AlwI    >< BsrI    BspWI >
GATTTGTTTA TGAGATTTT TACTCTTGA TCAATTACTG CACAGCCAGT AAAAATTGAC AATGCTTCTC
25280      25290      25300      25310      25320      25330      25340

  >< ScaI
  >< RsaI
  >< Csp6I    >< SfcI
  >< AfaI    >< NlaIII    >< AciI    >< MnlI    FokI >
CTGCAAGTAC TGTTCATGCT ACAGCAACGA TACCGCTACA AGCCTCACTC CCTTTCGGAT GGCTTGTTAT
25350      25360      25370      25380      25390      25400      25410

  > < HinPII
  > < Hin6I
    >< HhaI
    >< HaeII    >< HinPII    RmaI ><
    >< Eco47III    >< Hin6I    NheI ><
    >< CfoI    >< HhaI    MaeI ><
    >< BspWI    >< Bsp143II    >< CfoI    Fnu4HI ><
    >< AluI ><
TGGCGTTGCA TTTCTTGCTG TTTTTCAGAG CGCTACCAAA ATAATTGCGC TCAATAAAAG ATGGCAGCTA
25420      25430      25440      25450      25460      25470      25480

  >< EcoNI
  >< BslI
  >< BsiYI
    >< BbvI    >< BsrI    >< BbvI    > < Fnu4HI    BbvI ><
GCCCTTTATA AGGGCTTCCA GTTCATTGCG AATTACTGCG TGCTATTTGT TACCATCTAT TCACATCTTT
25490      25500      25510      25520      25530      25540      25550

    >< Zsp2I ><
    >< Ppu10I ><
    >< SfcI    >< HinPII
    >< PstI    >< Hin6I    >< RsaI    NsiI ><
    >< Fnu4HI    >< HhaI    >< Csp6I    Mph1103I ><
    >< BspMI    >< MnlI    >< CfoI    >< AfaI    >< MnlI    Eco22I ><
    >< AvaIII ><
TGCTTGTCGC TGCAGGTATG GAGGCGCAAT TTTTGTACCT CTATGCCTTG ATATATTTTC TACAATGCAT
25560      25570      25580      25590      25600      25610      25620

  >< SfaNI
  >< NspI
  >< NspHI
  >< NlaIII
CAACGCATGT AGAATTATTA TGAGATGTTG GCTTTGTTGG AAGTGCAAAT CCAAGAACCC ATTACTTTAT
25630      25640      25650      25660      25670      25680      25690

    >< Bst1107I
    >< AccI    MaeIII ><
GATGCCAACT ACTTTGTTTG CTGGCACACA CATAACTATG ACTACTGTAT ACCATATAAC AGTGTACAG
25700      25710      25720      25730      25740      25750      25760

    >< MboII
    >< BstXI ><
    >< MunI >< MaeIII >< MaeIII    >< Eco57I    >< BbsI MnlI >
ATACAATTGT CGTTACTGAA GGTGACGGCA TTTCAACACC AAAACTCAAA GAAGACTACC AAATTGGTGG
25770      25780      25790      25800      25810      25820      25830

    >< RsaI
    > < NlaIII
    >< HphI
    >< Tru9I >< Tth111I >< Csp6I
    >< DdeI    >< DdeI    >< MseI >< AspI    >< AfaI

```

FIGURE 13.59


```

TTATTCTGAG GATAGGCACT CAGGTGTTAA AGACTATGTC GTTGTACATG GCTATTTTAC CGAAGTTTAC
25840      25850      25860      25870      25880      25890      25900

      > < HinfI>< P1eI      >> BsrI      Tru9I >>
      >> AluI >> AccI      >> SfcI >> AlwNI      >> MboII      MseI >>
TACCAGCTTG AGTCTACACA AATTACTACA GACACTGGTA TTGAAAATGC TACATTCTTC ATCTTTAACA
25910      25920      25930      25940      25950      25960      25970

      > < TthHB8I
      >> Tru9I      >> TaqI      >> Ksp632I
      >> MseI      >> MboII      >> EarI BspWI >>
      >> AluI      >> Eco57I      >> Eam1104I AlwI >>
AGCTTGTTAA AGACCCACCG AATGTGCAAA TACACACAAT CGACGGCTCT TCAGGAGTTG CTAATCCAGC
25980      25990      26000      26010      26020      26030      26040

      >> XhoII
      >> Sau3AI
      >> NlaIV
      >> NdeII
      >> MflI
      >> MboI
      >> DpnII
      >> DpnI
      >> BstYI
      >> BstI
      >> BspAI
      >> Bsp143I
      >> BscBI
      >> BamHI >> AlwI      >> RmaI      RsaI >>
      >> MaeI      Csp6I >>
      >> AfaI >>
AATGGATCCA ATTTATGATG AGCCGACGAC GACTACTAGC GTGCCTTTGT AAGCACAAGA AAGTGAGTAC
26050      26060      26070      26080      26090      26100      26110

      > < Tru9I
      >> RsaI
      > < MseI
      >> MboII
      >> MaeII      >> RsaI
      > < RsaI      >> Csp6I      >> Tru9I >> Csp6I
      >> Csp6I      >> AfaI >> MseI >> AfaI
      > < AfaI
GAACTTATGT ACTCATTCGT TTCGGAAGAA ACAGGTACGT TAATAGTTAA TAGCGTACTT CTTTTTCTTG
26120      26130      26140      26150      26160      26170      26180

      >> TthHB8I
      >> TaqI
      >> RmaI      >> HinPII      > < RsaI
      > < MaeIII      >> Hin6I      Fnu4HI >>
      >> MaeI >> RmaI      >> HhaI      >> Csp6I
      >> FokI >> MaeI      >> CfoI >> BbvI > < AfaI
CTTTCGTGGT ATTCTTGCTA GTCACACTAG CCATCCTTAC TGCGCTTCGA TTGTGTGCGT ACTGCTGCAA
26190      26200      26210      26220      26230      26240      26250

      >> Tru9I
      >> MseI      >> Thai
      >> SspI >> MaeII      >> MvnI
      >> HpaI      >> MseI
      >> HindII      >> BstUI      Ksp632I >
      >> HincII      >> MaeII >> Bsp50I >> MboII EarI >
      >> AccI >> AccII      Eam1104I >
TATTGTTAAC GTGAGTTTGT TAAACCAAC GGTTTACGTC TACTCGCGTG TAAAAATCT GAACTCTTCT
26260      26270      26280      26290      26300      26310      26320

```

FIGURE 13.60

74/116

```

>< Sau3AI
>< NdeII
>< MboI
>< DpnII
>< MboII>< DpnI
>< XmnI >< BspAI> < Eco57I
>< Asp700I>< BspI43I
GAAGGAGTTC CTGATCTTCT GGTCTAAACG AACTAACTAT TATTATTATT CTGTTTGGAA CTTTAACATT
26330      26340      26350      26360      26370      26380      26390

>< ScrFI
>< MvaI
>< EcoRII
>< Ecl136I
>< DsaV NlaIV ><
>< BstOI
>< BstNI RmaI ><
>< BsiLI MaeI ><
>< ApyIBscBI ><
>< RsaI
>< MnlI
>< Tru9I
>< Csp6I
>< MseI
>< AluI
>< NlaIII
>< AfaI
GCTTATCATG GCAGACAACG GTACTATTAC CGTTGAGGAG CTAAACAAC TCCTGGAACA ATGGAACCTA
26400      26410      26420      26430      26440      26450      26460

>< ScrFI
>< RmaI
>< MvaI
>< MaeI
>< EcoRII
>< Ecl136I
>< DsaV
>< BstOI
>< BstNI
>< BsiLI
>< ApyI >< MaeIII
GTAATAGGTT TCCTATTCTT AGCCTGGATT ATGTTACTAC AATTTGCCTA TTCTAATCGG AACAGGTTTT
26470      26480      26490      26500      26510      26520      26530

>< Pali
>< MscI
>< MnlI >< MaeIII
>< HaeIII
>< EaeI
>< BsuRI
>< BsrI
>< RsaI
>< Csp6I >< HindIII
>< AfaI >< AluI
>< BspWI
>< BshI
>< BalI
>< BbvI Fnu4HI ><
TGACATAAT AAAGCTTGTT TTCCTCTGGC TCTTGTGGCC AGTAACACTT GCTTGTTTTG TGCTTGCTGC
26540      26550      26560      26570      26580      26590      26600

>< VspI
>< Tru9I
>< MseI
>< HphI
>< SfcI >< AsnI >< BsrI
>< AccI >< AseI>< MaeIII>< AciI
TGTCTACAGA ATTAATTGGG TGACTGGCGG GATTGCGATT GCAATGGCTT GTATTGTAGG CTTGATGTGG
26610      26620      26630      26640      26650      26660      26670

>< EspI
>< Eco57I
>< DdeI
>< CelII
>< Bpu1102I
>< RsaI
>< Csp6I

```

FIGURE 13.61

```

>< BfrI
  >< AluI
CTTAGCTACT TCGTTGCTTC CTTGAGGCTG TTTGCTCGTA CCCGCTCAAT GTGGTCATTC AACCCAGAAA
  26680      26690      26700      26710      26720      26730      26740

      >< ScrFI
      >< NciI
      >< MspI
      >< HpaII
      >< HapII
      >< DsaV>< MnlI
      >< BslI
      >< BsiYI
      >< BsaJI >< MniI          > < XcmI
      >< BcnI      >< MaeIII >< AciI >< NlaIII
CAAACATTCT TCTCAATGTG CCTCTCCGGG GGACAATTGT GACCAGACCG CTCATGGAAA GTGAATTGT
  26750      26760      26770      26780      26790      26800      26810

Tru9I ><
  SinI >
  Sau96I >
  PpuMI >
  NspIV >
  MseI ><
    >< MaeIII
    >< Sau3AI
    >< NdeII
    >< MboI
    >< FbaI
    >< DpnII
    >< DpnI
    >< BspAI
    >< Bsp143I
    >< BsiQI
    >< BclI
    >< MaeIII
    >< Pali
    >< MspI
    >< HpaII
    >< HapII
    >< HaeIII
    >< GdiII
    >< EaeI
    >< BsuRI
    >< BshI
    > < RmaI >< HaeII
    > < MaeI      EcoO109I >
    >< HinPIEco47I >
    >< StyI>< Hin6I DraII >
    >< EcoT14I      Cfr13I >
    >< Eco130I>< Bsp143II
    >< BssT1I      BsiZI >
    >< BsaJI      Bme18I >
    >< BlnI >< HhaI AvaII >
    >< AvrII >< CfoI AsuI >
CATTGGTGCT GTGATCATTC GTGGTCACTT GCGAATGGCC GGACACTCCC TAGGGCGCTG TGACATTAAG
  26820      26830      26840      26850      26860      26870      26880

    >< Sau3AI
    >< NdeII
    >< MboI
    >< DpnII
    >< DpnI
    >< PssI >< BspMI
    >< Psp5II >< BspAI
    >< NspHII >< Bsp143I
    >< XmnI
    >< Asp700I > < HgaI      Fnu4HI ><
GACCTGCCAA AAGAGATCAC TGTGGCTACA TCACGAACGC TTTCTTATTA CAAATTAGGA GCGTCGCAGC
  26890      26900      26910      26920      26930      26940      26950

    >< TfiI
    >< HinfI
    >< BbvI
    >< BbvI
    >< Fnu4HI >< AciI
    >< Tru9I
    >< MseI
GTGTAGGCAC TGATTCAGGT TTTGCTGCAT ACAACCGCTA CCGTATTGGA AACTATAAAT TAAATACAGA
  26960      26970      26980      26990      27000      27010      27020

    >< MspI
    >< HpaII
    >< HapII
    >< Cfr10I
    >< BcgI/a
    >< RsaI
    >< RmaI
    >< Csp6I
    >< MaeI>< BcgI
    >< AfaI >< MaeIII
    HindII ><
    HincII ><
  >< SspI

```

FIGURE 13.62

```

CCACGCCGGT AGCAACGACA ATATTGCTTT GCTAGTACAG TAAGTGACAA CAGATGTTTC ATCTTGTTGA
 27030      27040      27050      27060      27070      27080      27090

>< ScrFI
>< MvaI
  >< MaeIII
>< EcoRII
  >< Ecl136I
>< DsaV
  >< BstOI
  >< BstNI
  >< BsiLI
  >< ApyI
                                >< MnlI
                                HinfI >< TfiI
CTTCCAGGTT ACAATAGCAG AGATATTGAT TATCATTATG AGGACTTTCA GGATTGCTAT TTGGAATCTT
 27100      27110      27120      27130      27140      27150      27160

                                >< BsmAI
                                >< Tru9I
                                > < MnlI
>< MaeII      >< Alw26I      >< MseI      >< DdeI      >< MboII
GACGTTATAA TAAGTTCAAT AGTGAGACAA TTATTTAAGC CTCTAACTAA GAAGAATTAT TCGGAGTTAG
 27170      27180      27190      27200      27210      27220      27230

                                >< Ksp632I
                                >< EarI
                                >< MboII
                                >< NlaIII Eam1104I ><
ATGATGAAGA ACCTATGGAG TTAGATTATC CATAAAACGA ACATGAAAAT TATTCTCTTC CTGACATTGA
 27240      27250      27260      27270      27280      27290      27300

                                > < RsaI >< RsaI
                                >< Csp6I >< Csp6I
                                > < AfaI >< AfaI
TTGTATTTAC ATCTTGCGAG CTATATCACT ATCAGGAGTG TGTTAGAGGT ACGACTGTAC TACTAAAAGA
 27310      27320      27330      27340      27350      27360      27370

                                >< MnlI >< HphI >< HphI
                                >< MnlI
ACCTTGCCCA TCAGGAACAT ACGAGGGCAA TTCACCATTT CAGCCTCTTG CTGACAATAA ATTTGCACTA
 27380      27390      27400      27410      27420      27430      27440

                                Sau3AI >
                                > < PvuII
                                > < Psp5I
                                > < NspBII
                                >< TthHB8I
                                >< TaqI
                                >< RsaI
                                >< Csp6I
                                >< BbvI
                                >< AfaI
                                > < AluI
                                >< RmaI
                                >< MaeI
ACTTGCACTA GCACACACTT TGCTTTTGCT TGTGCTGACG GTACTCGACA TACCTATCAG CTGCGTGCAA
 27450      27460      27470      27480      27490      27500      27510

                                >< SstI
                                >< SduI
                                >< SacI
                                >< NspII
                                >< HgiAI
                                >< Eco24I
                                > < Ecl136II
                                >< BspWI
                                >< Bsp1286I
                                >< BmyI
                                >< BanII
                                >< Alw21I

>< HphI
>< DpnI
                                >< MnlI

```

FIGURE 13. 63

```

>< Bsp143I          >< MnlI          > < AluI      BbvI ><
GATCAGTTTC ACCAAACTT TTCATCAGAC AAGAGGAGGT TCAACAAGAG CTCTACTCGC CACTTTTTCT
27520      27530      27540      27550      27560      27570      27580

SstI ><
SduI ><
SacI ><
NspII ><
HgiAI ><
Eco24I ><
Ecl136II ><
Bsp1286I ><
BmyI ><
BanII ><
Alw21I ><
AluI ><

>< RmaI    >< Tru9I
>< MaeI    >< MseI          >< Tru9I
>< Fnu4HI   >< HphI          >< MseI
CATTGTTGCT GCTCTAGTAT TTTTAATACT TTGCTTCACC ATTAAGAGAA AGACAGAATG AATGAGCTCA
27590      27600      27610      27620      27630      27640      27650

>< Tru9I          >< Tru9I
>< MseI          >< MseI
CTTTAATTGA CTTCTATTTG TGCTTTTTAG CCTTTCTGCT ATTCCTTGTT TTAATAATGC TTATTATATT
27660      27670      27680      27690      27700      27710      27720

>< XhoII
>< XbaI
> < ScrFI
>< Sau3AI
>< RmaI
>< NdeII
> < MvaI
>< MflI
>< MboI
>< EcoRII>< MaeI
> < Ecl136I
>< DpnII
>< DpnI
>< BstYI
> < BstOI
> < BstNI
>< TthHB8I >< BspAI          > < RsaI
>< DsaV>< Bsp143I          >< MboII
> < BsiLI          >< Csp6I
>< TaqI > < ApyI > < AlwI > < AfaI          >< NlaIII
TTGGTTTTCA CTCGAAATCC AGGATCTAGA AGAACCTTGT ACCAAAGTCT AAACGAACAT GAAACTTCTC
27730      27740      27750      27760      27770      27780      27790

>< HinP1I
>< Hin6I
>< HhaI
>< RsaI >< HaeII
>< SfcI          >< Eco47III
>< Csp6I>< CfoI SfaNI ><
>< AfaI >< Bsp143II
ATGTTTTGA CTTGTATTTT TCTATGCAGT TGCATATGCA CTGTAGTACA GCGCTGTGCA TCTAATAAAC
27800      27810      27820      27830      27840      27850      27860

>< XhoII
>< Sau3AI
>< NdeII
> < MnlI
>< MflI

```

FIGURE 13.64

78/116

```

    >> MboI
    >> DpnII
        >> DpnI            >> RsaI
        >> BstYI    >> MboII
    >> NlaIII>> BspAI    >> Csp6I >> RmaI
    >> AlwI >> Bsp143I    >> AfaI >> MaeI
CTCATGTGCT TGAAGATCCT TGTAAGGTAC AACACTAGGG GTAATACTTA TAGCACTGCT TGGCTTTGTG
27870      27880      27890      27900      27910      27920      27930

    >> SduI
    >> RmaI
    >> NspII
    >> MaeI
    >> HgiAI
    >> Bsp1286I
    >> BmyI
    >> Alw21I
                                                >> NspI
                                                >> NspHI
                                                >> NlaIII >> MaeIII
CTCTAGGAAA GGTTTTACCT TTTCATAGAT GGCACACTAT GGTTCAAACA TGCACACCTA ATGTTACTAT
27940      27950      27960      27970      27980      27990      28000

    > < XhoII
    > < Sau3AI > < Van9II
        >> PvuII
        >> Psp5I
    > < NdeII > < PflMI
    > < MflI>< NspBII
    > < DpnII            >> HinP1I
        >> Bsp143I    >> Hin6I
    > < BstYI > < BslI >> HhaI >> RmaI
    > < BspAI > < BsiYI>< CfoI >> MaeI
    > < MboI>< AluI>< BspWI >> BspWI
    >> AlwI >> DpnI > < AccB7I    >> AluI
                                                >> RsaI
                                                >> NlaIV
                                                >> KpnI >> NlaIII
    >> Eco64I    >> MaeIII
    >> Csp6I>< HphI
    >> BscBI    >> Eco0651
    >> BanI >> BspHI
    >> Asp718    >> Eco91I
    >> AfaI    >> BstPI
    >> AccB1I    >> BstEII
    >> Acc65I    >> BbvI
CAACTGTCAA GATCCAGCTG GTGGTGCGCT TATAGCTAGG TGTTGGTACC TTCATGAAGG TCACCAAAC
28010      28020      28030      28040      28050      28060      28070

                                                >> SinI
                                                >> Sau96I
                                                >> NspIV
    NspHII >>
    NlaIV >>
        >> Eco47I
        >> Cfr13I
        >> BsiZI
    BscBI >>
        >> Bme18I
        >> AvaII
        >> AsuI
    >> Fnu4HI    >> RsaI
    >> Esp3I    >> MaeII
        >> Csp6I    >> Tru9I
    >> BsmAI    >> BsmBI    >> MseI
    >> Alw26I    >> AfaI    >> DraI
    >> Tru9I
    >> MseI
GCTGCATTTA GAGACGTACT TGTTGTTTTA AATAAACGAA CAAATTAAAA TGTCTGATAA TGGACCCCAA
28080      28090      28100      28110      28120      28130      28140

    >> SinI
    >> Sau96I
    >> NspIV
    >> NspHII
    >> NlaIV
    >> Eco47I
    >> Cfr13I
    >> BsiZI
    >> BscBI
    >> Bme18I
    >> AvaII
    >> AsuI
    >> SduI
    >> NspII
    >> Bsp1286I
    >> BmyI
    >> MaeII    >> AciI
    >> AsuI    >> HinfI
                                                >> MnlI

```

FIGURE 13. 65

```

TCAAACCAAC GTAGTGCCCC CCGCATTACA TTTGCTGGAC CCACAGATTC AACTGACAAT AACCAGAATG
28150      28160      28170      28180      28190      28200      28210

      >< HinPII >< StyI
      >< HaeII
      > < Pali >< Hin6I >< EcoT14I
      > < HaeIII >< HhaI>< Eco130I
      >< BspWI >< BssTII
      > < BsuRI >< Bsp143II
      >< HgaI> < BshI >< CfoI>< BsaJI >< HgaI
GAGGACGCAA TGGGGCAAGG CCAAAACAGC GCCGACCCCA AGGTTTACCC AATAATACTG CGTCTTGTT
28220      28230      28240      28250      28260      28270      28280

      >< TthHB8I
      > < ScrFI
      >< Pali
      >< PaeR7I
      >< NspIII
      > < MvaI
      >< HaeIII
      >< EcoRII
      >< Eco88I
      >< XhoI > < Ecl136I
      >< DsaV
      >< BsuRI
      >< SlaI > < BstOI
      >< MnlI>< TaqI> < BstNI
      >< CcrI > < BsiLI
      >< HinfI >< BshI
      >< TfiI>< BcoI>< BsaJI
      >< MnlI >< DdeI >< Aval > < ApyI
      >< AluI >< DdeI > < NlaIII >< BfrI >< Ama87I >< MnlI
CACAGCTCTC ACTCAGCATG GCAAGGAGGA ACTTAGATTC CCTCGAGGCC AGGGCGTTCC AATCAACACC
28290      28300      28310      28320      28330      28340      28350

      >< SinI
      >< Sau96I
      >< NspIV
      >< NspHII
      >< Eco47I
      >< Cfr13I
      >< Bsi2I
      >< Bme18I > < Ksp632I
      >< AvaII > < Eam1104I
      >< AsuI > < EarI > < AluI>< MboII >< MaeIII
AATAGTGGTC CAGATGACCA AATTGGCTAC TACCGAAGAG CTACCCGACG AGTTCGTGGT GGTGACGGCA
28360      28370      28380      28390      28400      28410      28420

      >< SstI
      >< SduI
      >< SacI
      >< NspII
      >< HgiAI
      >< EspI
      >< Eco24I
      >< Ecl136II >< StyI >< Sau96I
      >< DdeI >< RmaI >< Pali
      >< CelII >< MaeI >< NspIV
      >< Bsp1286I >< EcoT14I >< Cfr13I
      >< Bpu1102I >< Eco130I >< BsuRI
      >< BmyI >< BssTII > < BsrI
      >< BanII >< RsaI >< BsaJI >< Bsi2I

```

FIGURE 13.66

80/116

```

    >< Alw21I    >< Csp6I    >< BlnI    >< BshI>< HindIII
    >< HphI    >< AluI        >< AfaI    >< AvrII    >< AsuI    >< AluI
AAATGAAAGA GCTCAGCCCC AGATGGTACT TCTATTACCT AGGAAGCTGC CCAGAAGCTT CACTTCCCTA
    28430      28440      28450      28460      28470      28480      28490

    >< HinPII
    >< Hin6I
    >< HhaI
    >< HaeII
    >< CfoI
    >< Bsp143II
    >< MnlI
    >< NlaIV
    >< SfaNI >< DdeI >< BscBI
CGGCGCTAAC AAAGAAGGCA TCGTATGGGT TGCAACTGAG GGAGCCTTGA ATACACCCAA AGACCACATT
    28500      28510      28520      28530      28540      28550      28560

    >< NlaIV
    >< Eco64I
    >< BscBI
    >< BaniI
    >< AciI
    >< AccB1I >< BbvI    >< Fnu4HI
GGCACCCGCA ATCCTAATAA CAATGCTGCC ACCGTGCTAC AACTTCCTCA AGGAACAACA TTGCCAAAAG
    28570      28580      28590      28600      28610      28620      28630

    >< Thal
    >< MnlI
    >< MaeII >< MvnI
    >< MnlI
    >< Fnu4HI
    >< Ksp632I
    >< Bsp50I ><
    >< BspWI
    >< EarI
    >< BsaAI>< AciI
    >< MnlI >< MnlI >< AciI>< MboII
    >< Eam1104I
    >< AccII ><
GCTTCTACGC AGAGGGAAGC AGAGGCGGCA GTCAAGCCTC TTCTCGCTCC TCATCACGTA GTCGCGGTAA
    28640      28650      28660      28670      28680      28690      28700

    >< ScrFI
    >< MvaI
    >< EcoRII
    >< Ecl136I
    >< DsaV>< Fnu4HI
    >< BstOI
    >< BstNI
    >< BsiLI
    >< ApyI
    >< BbvI
    >< TaqI
    >< AciI
TTCAAGAAAT TCAACTCCTG GCAGCAGTAG GGGAAATTCT CCTGCTCGAA TGGCTAGCGG AGGTGGTGAA
    28710      28720      28730      28740      28750      28760      28770

    >< Thal
    >< MvnI
    >< HphI >< MnlI
    >< HinPII
    >< Hin6I
    >< HhaI
    >< BstUI >< RmaI
    >< Bsp50I >< MaeI
    >< BbvI >< CfoI>< Fnu4HI
    >< AccII>< BspWI
    >< AluI
    >< Pali ><
    >< HaeIII ><
    >< BsuRI ><
    >< BshI ><
ACTGCCCTCG CGCTATTGCT GCTAGACAGA TTGAACCAGC TTGAGAGCAA AGTTTCTGGT AAAGGCCAAC
    28780      28790      28800      28810      28820      28830      28840

    >< Pali>< MaeIII
    >< HaeIII
    >< BsuRI >< DdeI
    >< Fnu4HI
    >< DdeI
    >< RsaI ><
    >< MnlI
    >< MaeII ><
    >< Csp6I ><

```

FIGURE 13.67

81/116

```

> < BshI > < BbvI >> MnlI >> BspWI >> SfaNI AfaI ><
AACAAACAAGG CCAAAGTGTG ACTAAGAAAT CTGCTGTGTA GGCATCTAAA AAGCCTCGCC AAAAACGTAC
28850 28860 28870 28880 28890 28900 28910

>> Tth111I
>> SniI
>> Sau96I
>> NspIV
>> NspHII
> < MaeII
>> Eco47I
>> Cfr13I
>> BsmBI
>> BsiZI >> StyI
>> Bme18I >> EcoT14I
>> AvaII >> Eco130I
>> AsuI >> BssT1I
>> Alw26I> < AspI >> BsaJI
TGCCACAAAA CAGTACAACG TCACTCAAGC ATTTGGGAGA CGTGGTCCAG AACAAACCCA AGGAAATTTTC
28920 28930 28940 28950 28960 28970 28980

>> SniI
>> Sau96I
>> NspIV
>> NspHII
>> NlaIV
>> Eco47I >> Pali
>> Cfr13I >> HaeIII
>> BsiZI >> GdiII
>> BscBI >> Fnu4HI
>> Bme18I >> EaeI
>> AvaII >> BsuRI
>> AsuI >> BshI >> BspWI >
GGGGACCAAG ACCTAATCAG ACAAGGAACT GATTACAAAC ATTGGCCGCA AATTGCACAA TTTGCTCCAA
28990 29000 29010 29020 29030 29040 29050

>> BsmI >> NlaIII
>> BscCI >> MnlI >> MaeIII >> MaeIII >> NlaIII
GTGCCTCTGC ATTCTTTGGA ATGTCACGCA TTGGCATGGA AGTCACACCT TCGGGAACAT GGCTGACTTA
29060 29070 29080 29090 29100 29110 29120

>> XhoII
>> Sau3AI
>> NdeII
>> MflI
>> MboI
>> FokI
>> Tru9I >> DpnII
>> NlaIV >> DpnI
>> NlaIII >> BstYI >> Tth111I
>> MseI >> BspAI >> MaeII
>> BscBI >> BstXI>> AlwI> < Bsp143I >> AspI BspWI ><
TCATGGAGCC ATTAAATTGG ATGACAAAGA TCCACAATTC AAAGACAACG TCATACTGCT GAACAAGCAC
29130 29140 29150 29160 29170 29180 29190

>> HgaI
ATTGACGCAT ACAAACATT CCCACCAACA GAGCCTAAAA AGGACAAAAA GAAAAAGACT GATGAAGCTC
29200 29210 29220 29230 29240 29250 29260

EspI ><
DdeI ><
CeiII ><
Bpu1102I ><
AluI ><

```

FIGURE 13.68

```

                >< P1eI
    >< Fnu4HI
    >< BspWI
    >< BsmAI
    >< Alw26I
    >< AciI
    >< Fnu4HI
    >< BbvI
    >< AciI
    >< NlaIII
AGCCTTTGCC GCAGAGACAA AAGAAGCAGC CCACTGTGAC TCTTCTTCCT GCGGCTGACA TGGATGATTT
29270      29280      29290      29300      29310      29320      29330

                >< NlaIII
    >< FokI
    >< AluI
    >< TfiI>< DdeI
    >< BspHI
CTCCAGACAA CTTCAAAATT CCATGAGTGG AGCTTCTGCT GATTCAACTC AGGCATAAAC ACTCATGATG
29340      29350      29360      29370      29380      29390      29400

                >< MaeII
    >< AccI
ACCACACAAG GCAGATGGGC TATGTAAACG TTTTCGCAAT TCCGTTTACG ATACATAGTC TACTCTTGTG
29410      29420      29430      29440      29450      29460      29470

                >< Tru9I
    >< Tru9I
    >< MseI
    >< MseI
    >< HpaI
    >< HindII
    >< HincII
    Tru9I ><
    MseI ><
CAGAATGAAT TCTCGTAACT AAACAGCACA AGTAGGTTTA GTTAACTTTA ATCTCACATA GCAATCTTTA
29480      29490      29500      29510      29520      29530      29540

                XorII >
                TthHB8I >
                TaqI >
                Sau3AI ><
                RsaI ><
    >< ThaIPvuI >
    NdeII ><
    >< MnlI
    >< MvnIMcrI >
    MboI ><
    DpnII ><
    DpnI ><
    Csp6I ><
    >< BstUI
    >< HaeIII BspCI >
    BspAI ><
    >< TthHB8I >< Bsp50I
    >< Pali Bsp143I ><
    >< BsuRI BsiEI >
    >< BshIAfaI ><
    >< MnlI
    >< MaeIII
    >< TaqI
    >< AciI
    >< MnlI
    >< AccII
ATCAATGTGT AACATTAGGG AGGACTTGAA AGAGCCACCA CATTTCATC GAGGCCACGC GGAGTACGAT
29550      29560      29570      29580      29590      29600      29610

                >< SduI
    >< NspII
    >< MboII
    >< VspI
    >< Ksp632I
    >< Eco24I
    >< Tru9I
    >< RsaI
    >< RmaI
    >< Fnu4HI
    >< Bsp1286I
    >< MseI
    >< Csp6I
    >< MaeI
    >< EarI
    >< BmyI
    >< AsnI
    >< AfaI
    >< BbvI
    >< AluI>< Eam1104I
    >< BanII
    >< AseI

```

FIGURE 13.69

83/116.

CGAGGGTACA GTGAATAATG CTAGGGAGAG CTGCCTATAT GGAAGAGCCC TAATGTGTAA AATTAATTTT
29620 29630 29640 29650 29660 29670 29680

>< Tru9I >< DdeI

>< MseI >< BfrI

>< NlaIII >< AluI

AGTAGTGCTA TCCCATGTG ATTTAATAG CTTCTTAGGA GAATGACAAA AAAAAAAAAA AAAAAA
29690 29700 29710 29720 29730 29740

FIGURE 13. 70

SRAS serology: Indirect N Technique (First set)

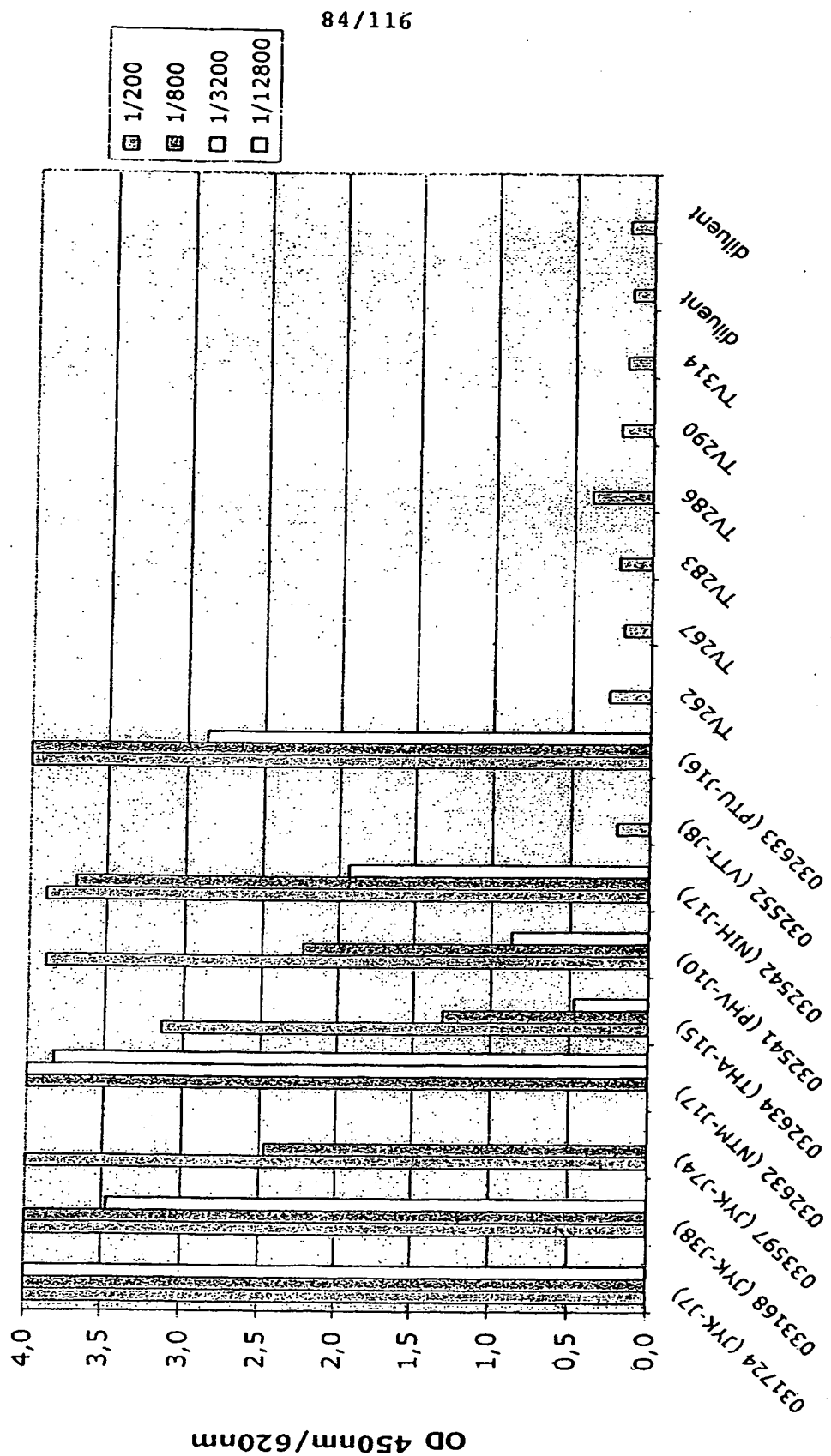


FIGURE 14

SRAS serology: Indirect N Technique (Second set)

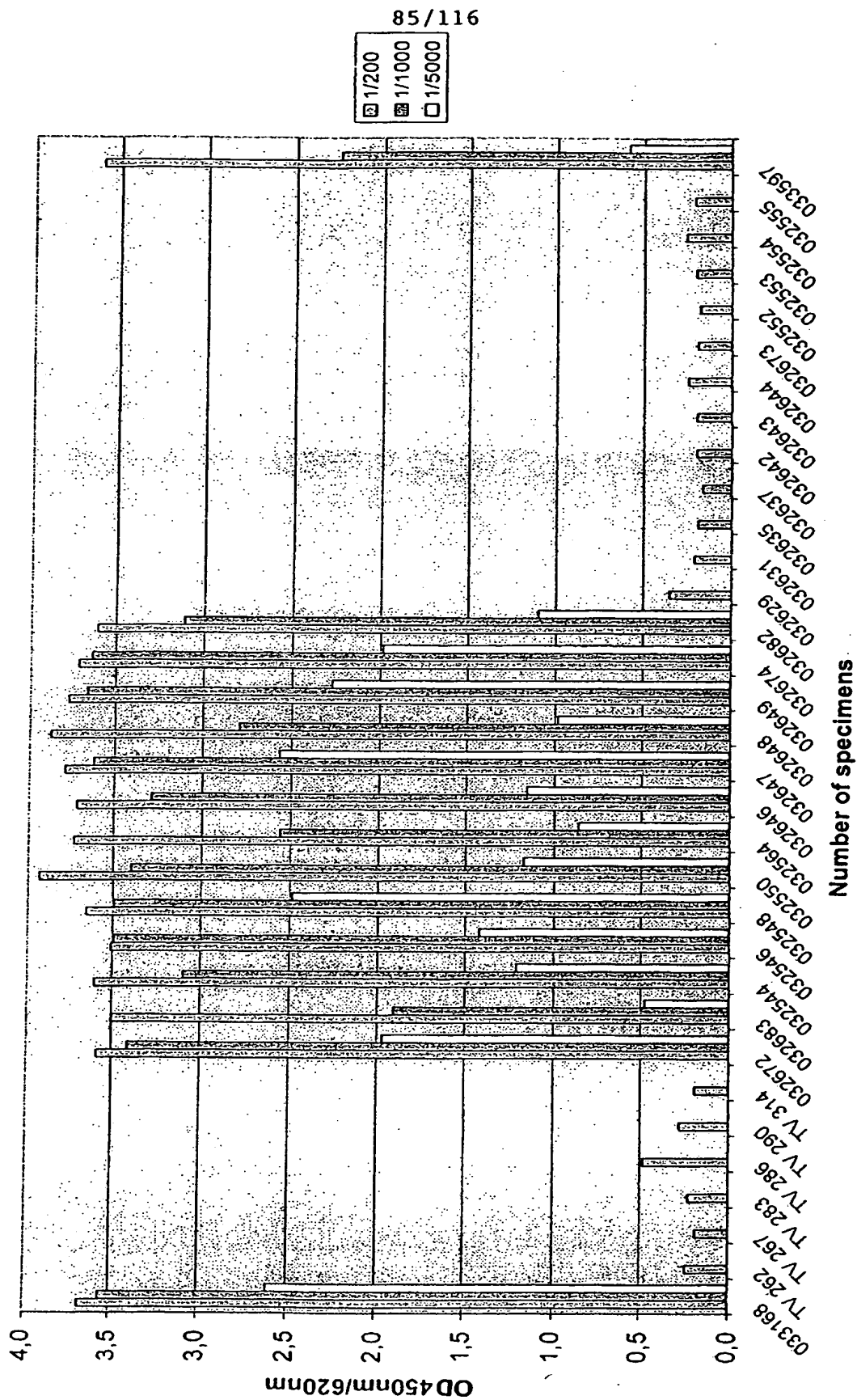


FIGURE 15

87/116



FIGURE 17

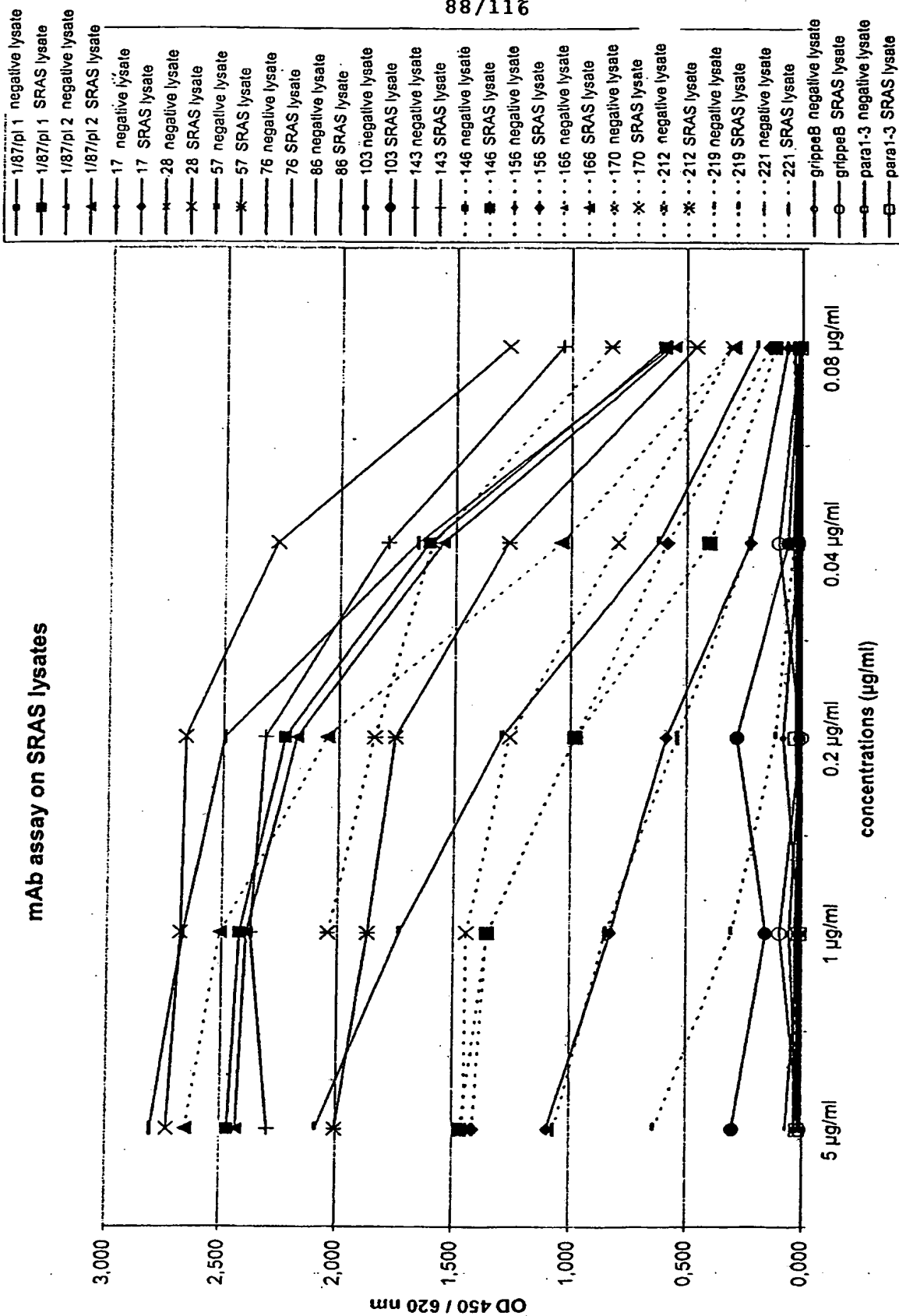


FIGURE 18

mAb assay on HCoV-229E lysates

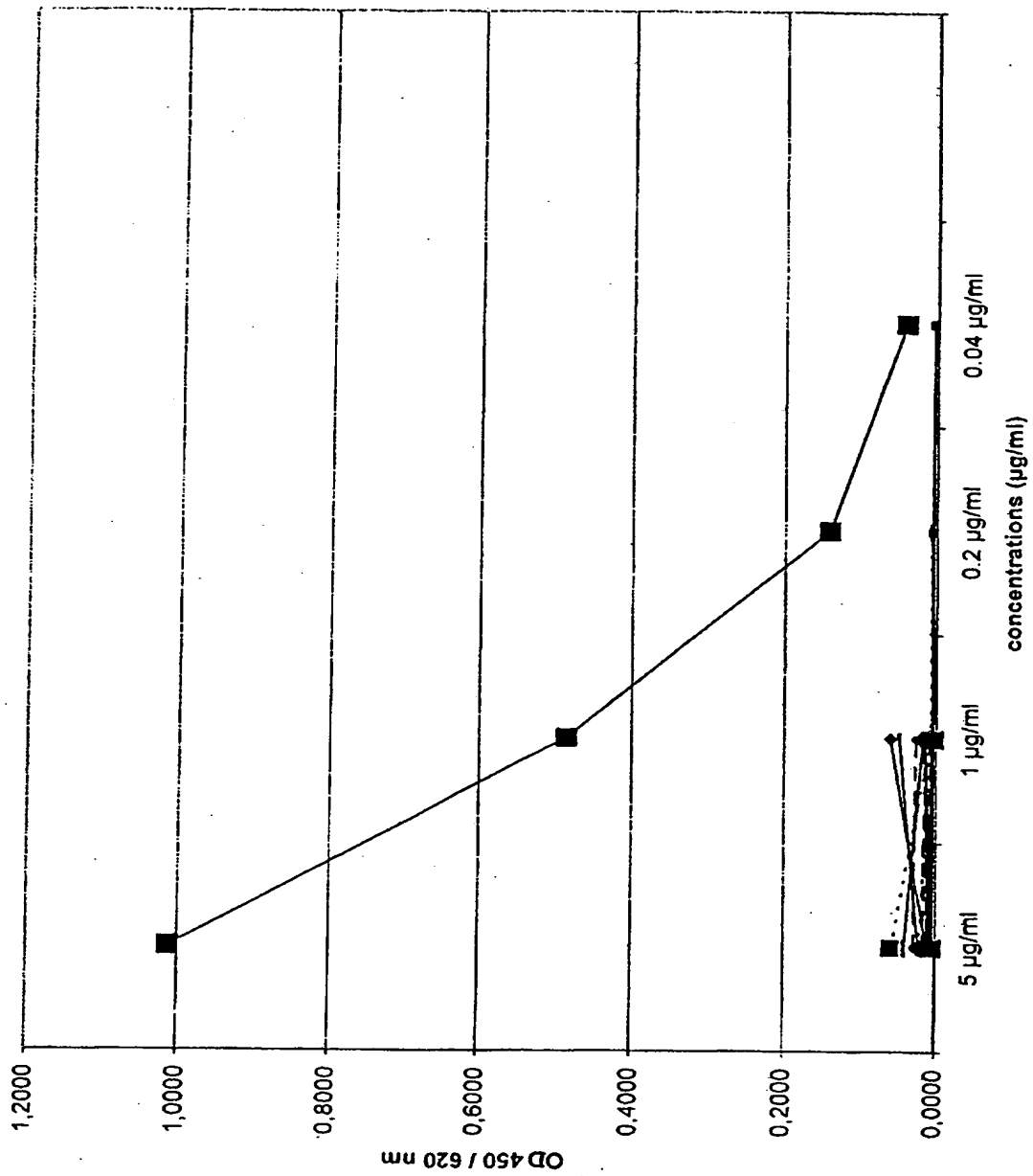


FIGURE 19

- 1/87 negative lysate
- ▲— 1/87 lysat 229E
- 5-11 H.6 negative lysate
- 5-11 H.6 lysat 229E
- 17 lysat negative lysate
- 17 lysat 229E
- 28 negative lysate
- 28 lysat 229E
- 57 negative lysate
- 57 lysat 229E
- ▲— 76 negative lysate
- ▲— 76 lysat 229E
- 86 negative lysate
- 86 lysat 229E
- 103 negative lysate
- 103 lysat 229E
- 143 negative lysate
- 143 lysat 229E
- 146 negative lysate
- 146 lysat 229E
- ▲— 156 negative lysate
- ▲— 156 lysat 229E
- 166 negative lysate
- 166 lysat 229E
- 170 negative lysate
- 170 lysat 229E
- 212 negative lysate
- 212 lysat 229E
- 219 negative lysate
- 219 lysat 229E
- ▲— 221 negative lysate
- ▲— 221 lysat 229E
- grippeB negative lysate
- grippeB lysat 229E
- para 1-3 negative lysate
- para 1-3 lysat 229E

#para1-3
#grippeB
#221
#219
#212
#170
#166
#156
#146
#143
#103
#86
#76
#57
#28
#17
1/87



FIGURE 20

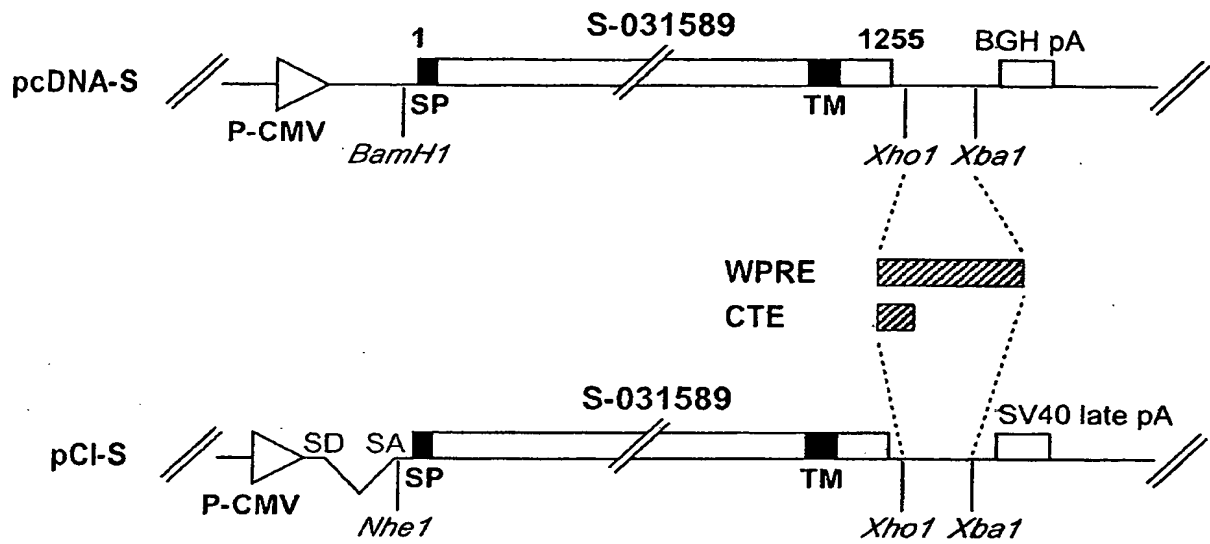


FIGURE 21

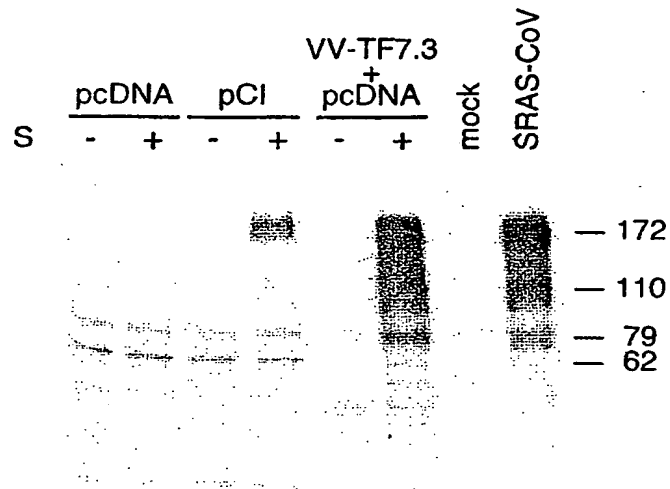
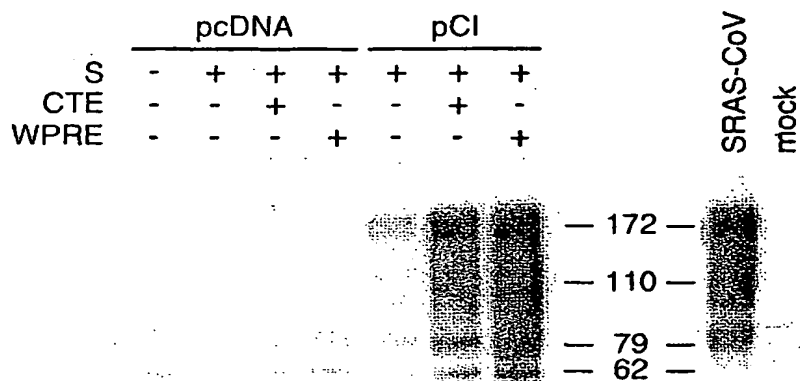


FIGURE 22

A.



B.

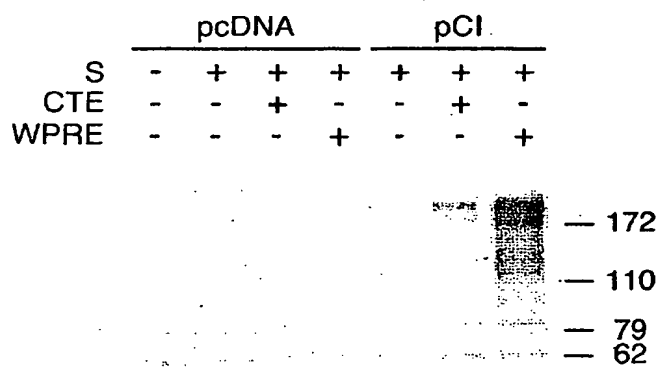
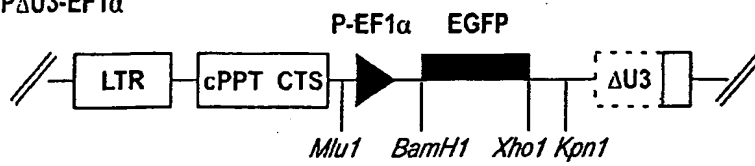
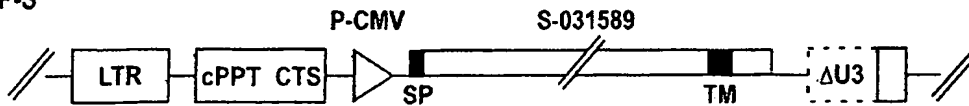


FIGURE 23

pTRIP Δ U3-EF1 α 

pTRIP-S



pTRIP-SD/SA-S-CTE



pTRIP-SD/SA-S-WPRE

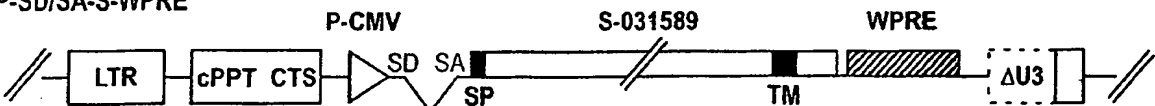


FIGURE 24

95/116

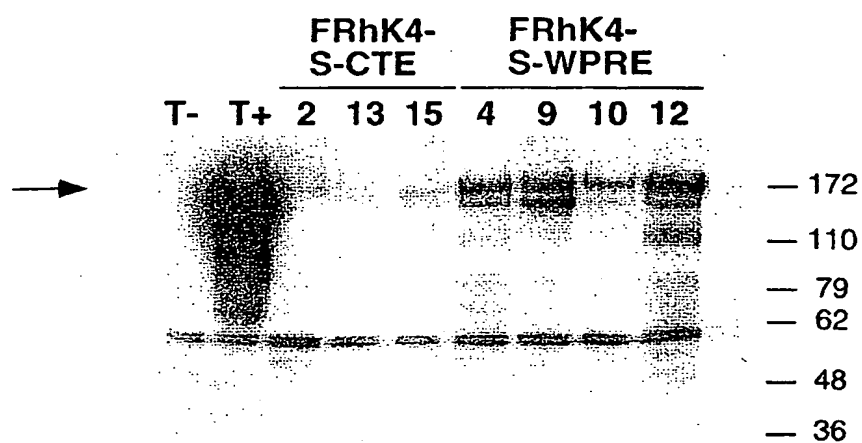


FIGURE 25

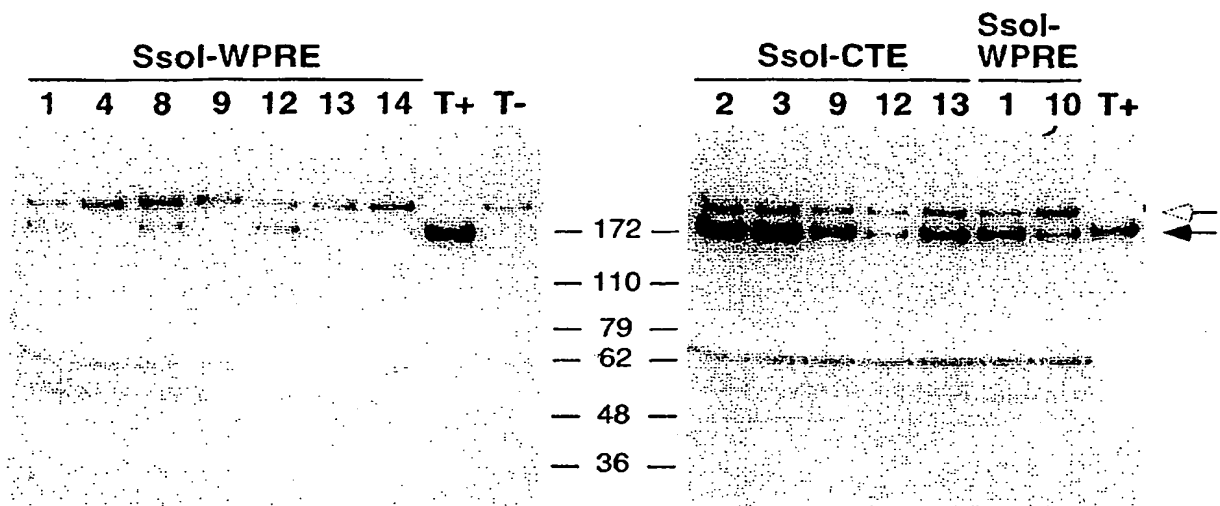
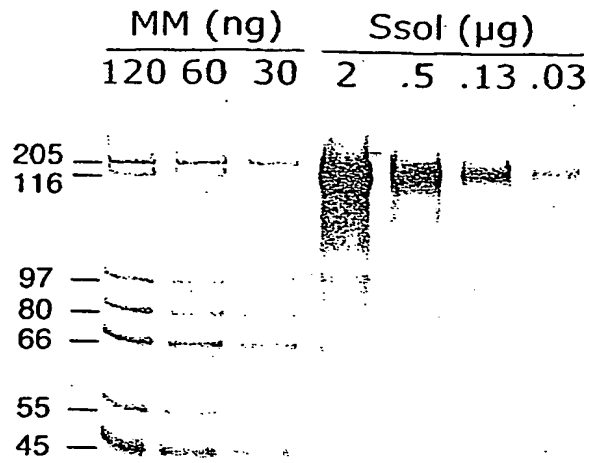


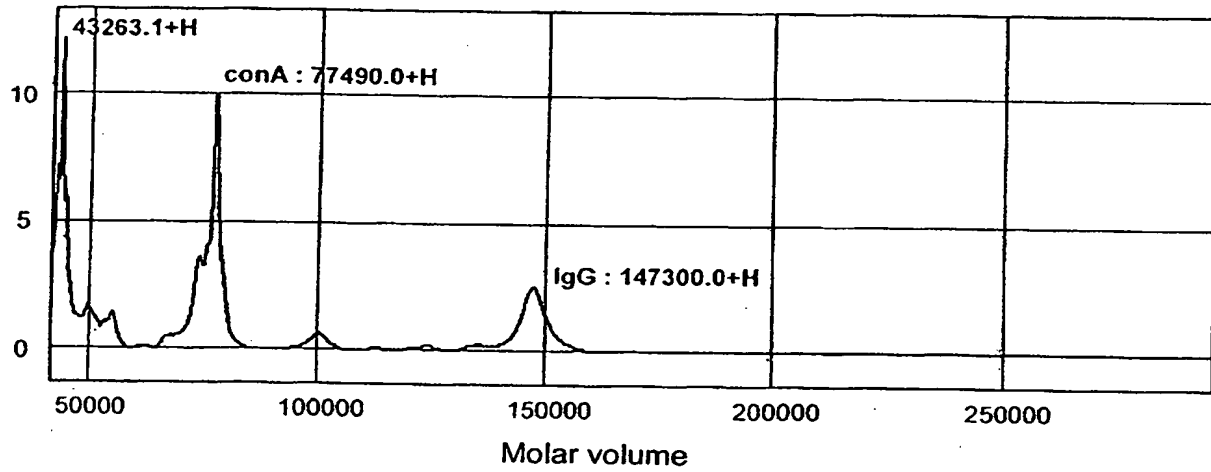
FIGURE 26

97/116

A.



B.



C.

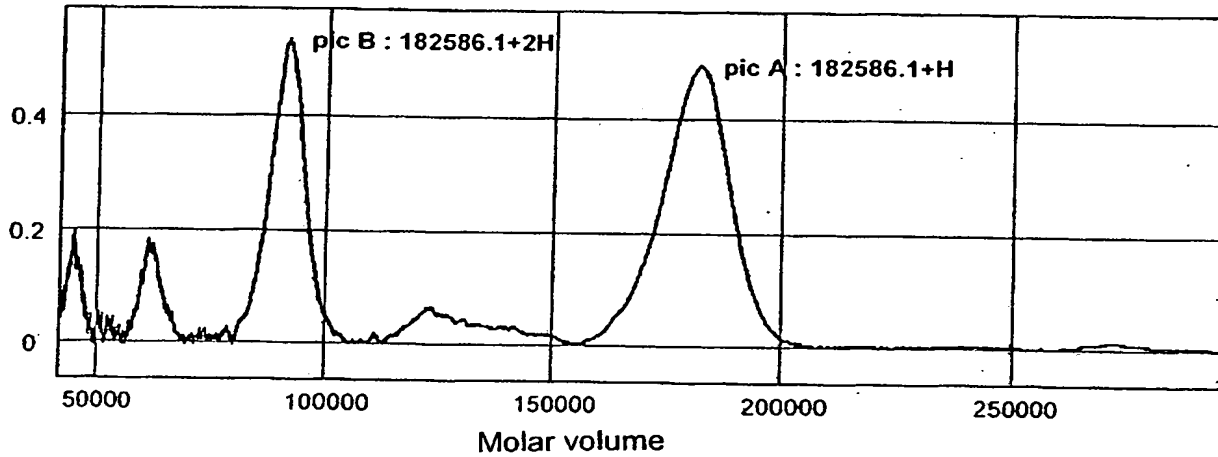


FIGURE 27 A-C

D.

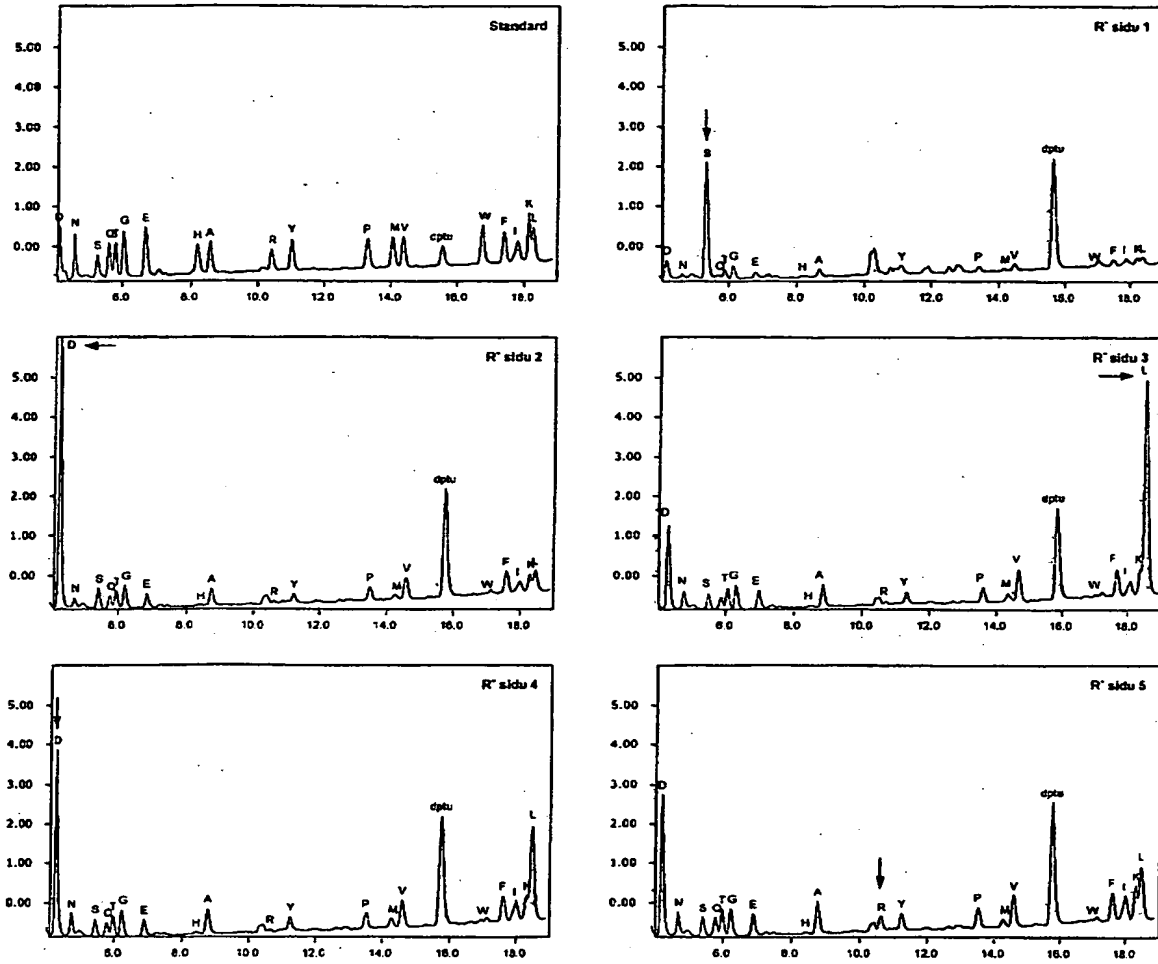
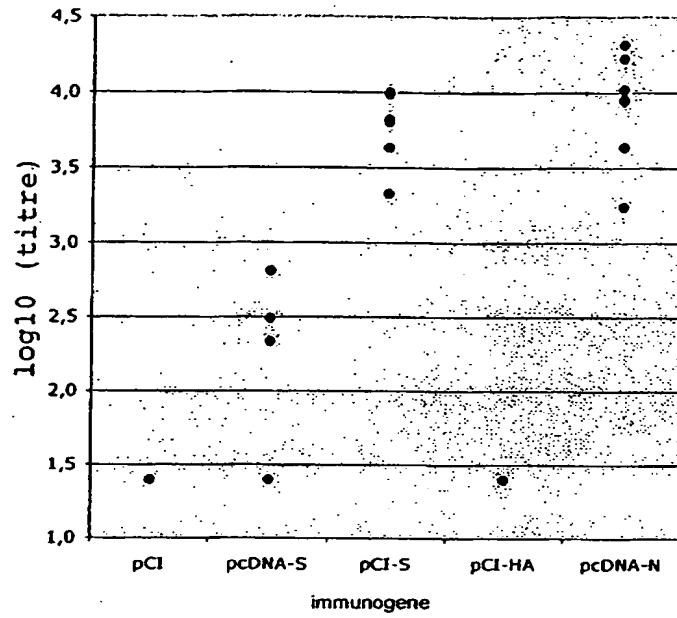


FIGURE 27 D

A.



B.

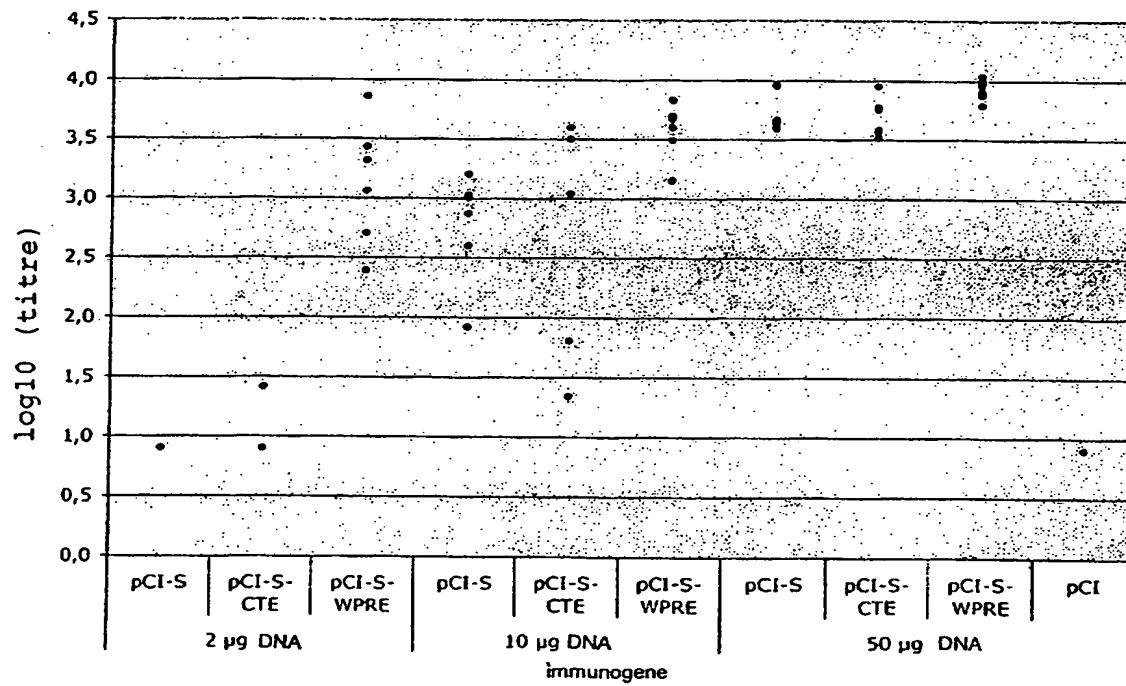


FIGURE 28

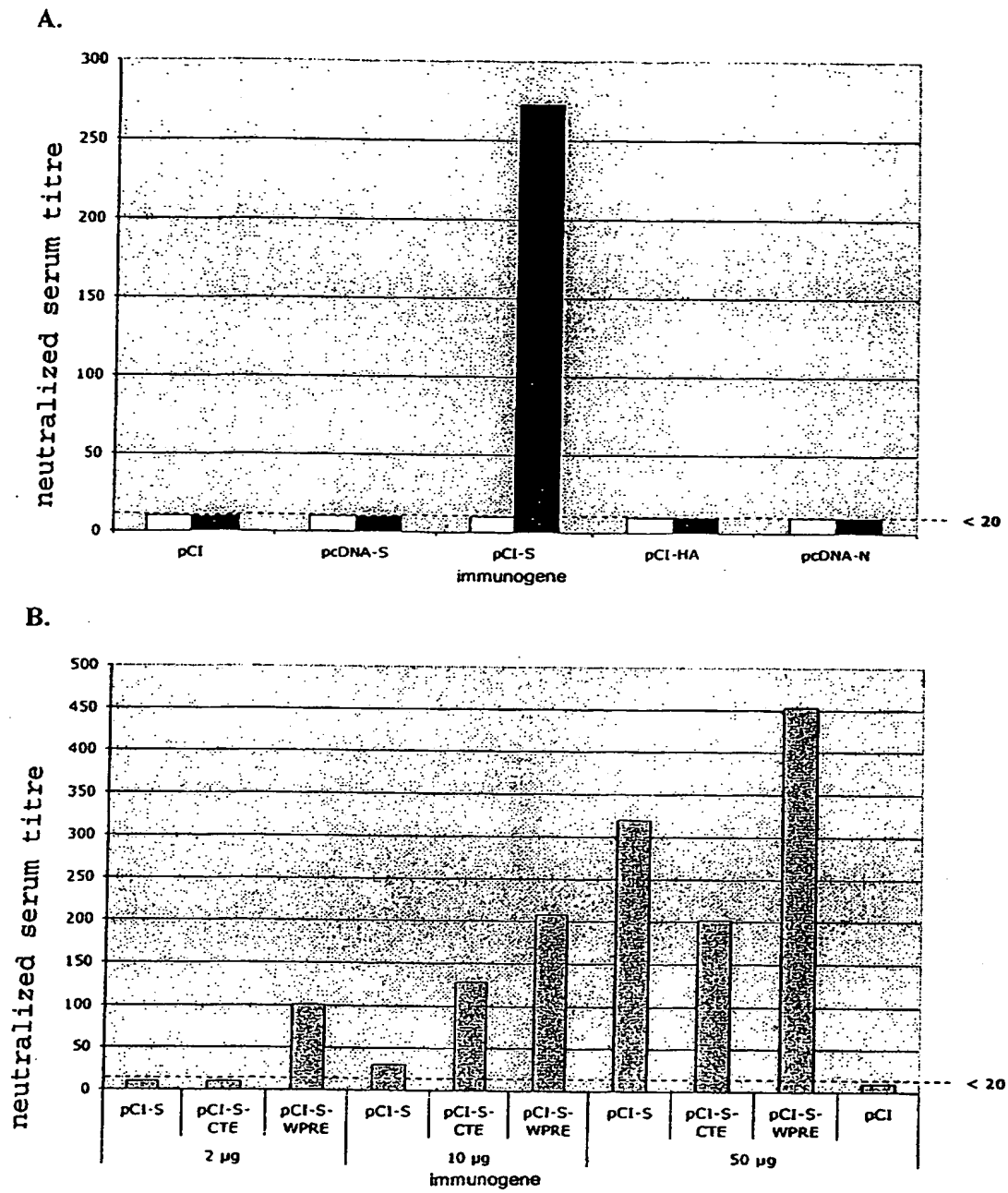


FIGURE 29

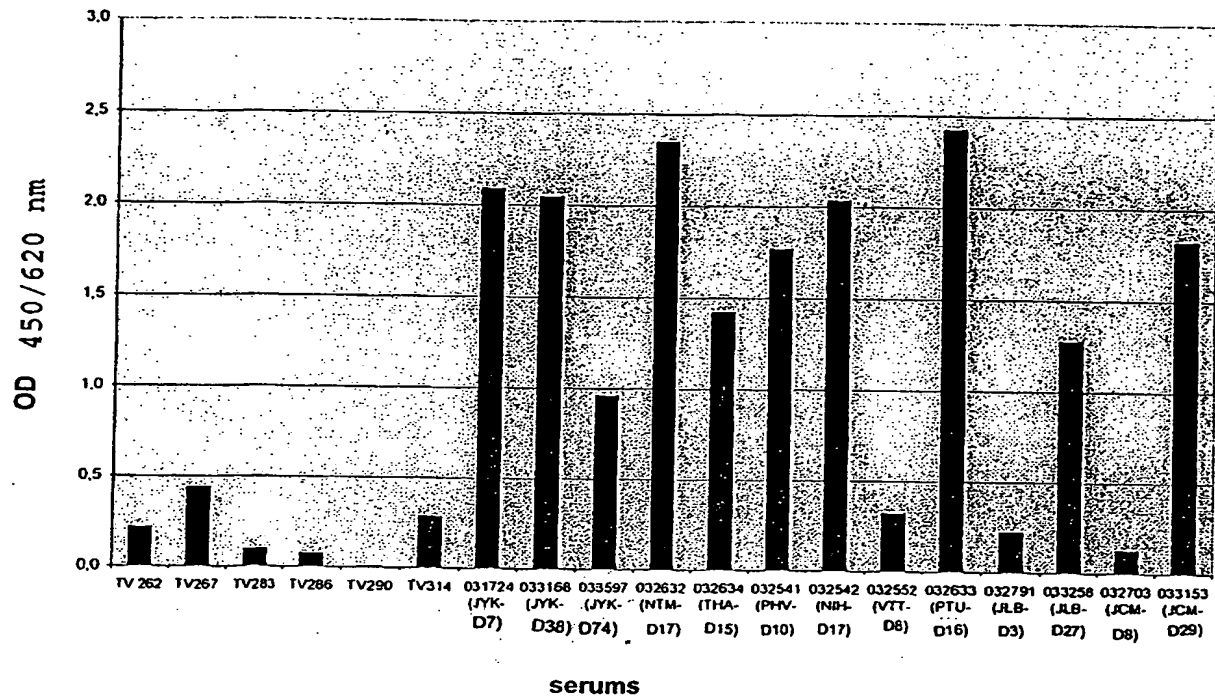


FIGURE 30

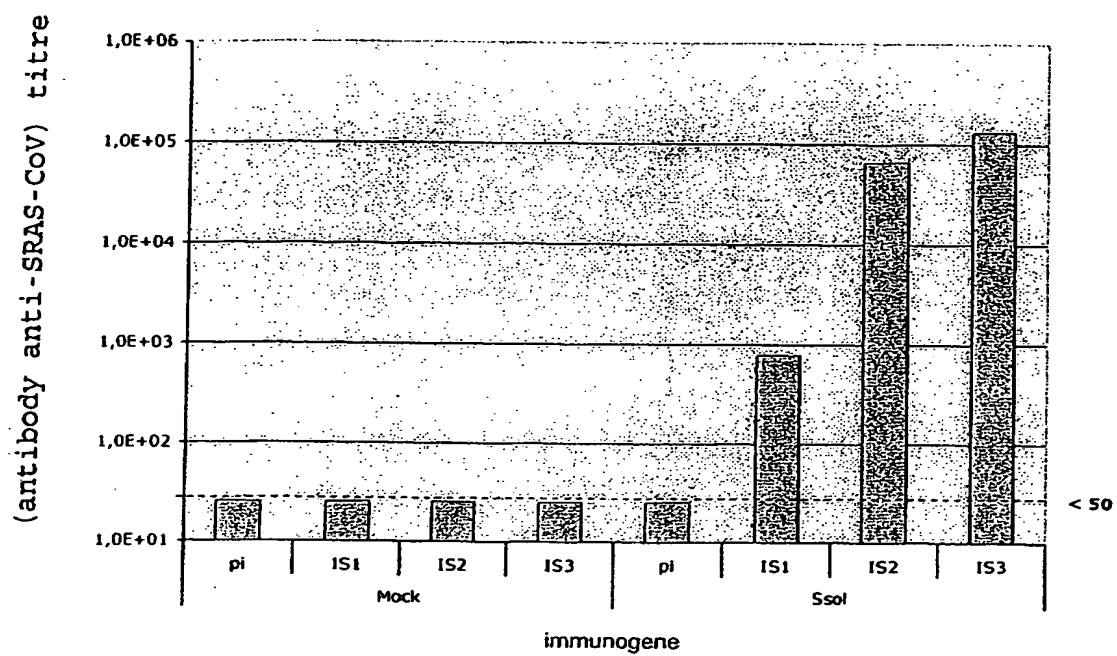


FIGURE 31

FIGURE 32.1

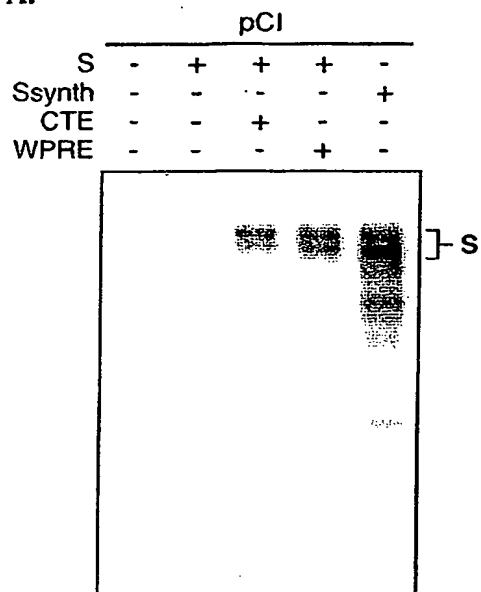
FIGURE 32.1

I-3059	1320	TTGCCAGATGATTTCATGGGTCTCCTTGGAAATACTAGGAACATTGATGCTACT
S-040530	1243	C""A
I-3059	1380	TCAACTGGTAATTATAATTATAAAATATAGGTATCTTAGACATGGCAAGCTTAGGCCCTTT
S-040530	1303	AGC""C"
I-3059	1440	GAGAGAGACATATCTAATGTGCCTTCTCCCCTGATGGCAAACCTTGCACCCCACCTGCT
S-040530	1363	" ""C""G"" "" ""C""C""C""C""C""C""C""AG""C""C""C""C""C""C""C""C""C""C"
I-3059	1500	CTTAATTGTTATTGGCCATTAAATGATTATGGTTTTTACACCCTACTGGCATTTGGCTAC
S-040530	1423	" "G""C"
I-3059	1560	CAACCTTACAGAGTTGTAGTACTTTCTTTTGAACCTTTAAATGCACCGGCCACGGTTTGT
S-040530	1483	" "G""C""C""C""C""C""C""G""G""G""GAGC""C""C""G""GC""G""C""C""T"" ""C""G""C"
I-3059	1620	GGACCAAAAATTATCCA CTGACCTTATTAAGAACCAGTG TGTCAATTTTAATTTAATGGA
S-040530	1543	" "C""C""C""GC"GAG""C""C""C""C""C""C""C""C""C""C""C""C""C""C""C""C"
I-3059	1680	CTCACTGGTACTGGTGTGTTAACTCCTTCTTCA _ AAGAGATTTCAACCATTTCACAAT
S-040530	1603	" "G""C""C""C""C""C""C""C""G""C"" _ AG""GC""C""C""C""C""G""C""C""G""G"
I-3059	1738	TTGGCCGTGATGTCTCTGATTTCACTGATTCGGTTCGAGATCCTAAAACATCTGAAATAT
S-040530	1661	"C"" "" ""G"" "" ""GAGC""C"" "" ""C""CAG"" ""G""G""C""C""G""CAGC""G""CC
I-3059	1798	TAGACATTTACCTTGCTCTTTTGGGGGTGTAAGTGAATTACACCTGGAACAAATGCTT
S-040530	1721	"G"" "" ""CAGC""C"" ""AGC""C""C""C""C""GTCC""G""C""C""C""C""C""C""CA
I-3059	1858	_ CATCTGAAGTTGCTGTTCTATATCAAGATGTTAACTGCACTGATGTTTCTACAGCAATC
S-040530	1781	G""G"" _ "" "" ""G""C""G""G""G""G""G""G""G"" "" "" ""C"" "" ""GAGC""C"" "" "
I-3059	1917	CATGCAGATCAACTCACACCAGCTTGGCGCATATATTCTACTGGAAACAATGTATTCCAG
S-040530	1840	" "C""C""C""C""G""G""C""C""C""C""C"" "" ""G""C""CAGC""C""G"" "" "" ""C""G"" "" ""
I-3059	1977	ACTCAAGCAGGCTGTCTTATAGGAGCTGAGCATGTCGACACTTCTTATGAGTGC GACATT
S-040530	1900	" "C""G""C"" "" "" ""C""G""C""C""C""C"" "" "" ""C""G"" "" "" ""CAGC""C"" "" "" "" ""C"
I-3059	2037	CCTATTGGAGCTGGCATT TTGTGCTAGTTACCATACAGTTTCTTTATTACGTAGTACTAGC
S-040530	1960	" "C"" "" "" ""C""C""A""C""C""C""C""C"" "" "" ""C""C""GAGCC""GC""G""G""C""C"" "" "
I-3059	2097	CAAAAATCTATTGTGGCTTATACTATGTCTTTAGGTGCTGATAGTTCAATTGCTTACTCT
S-040530	2020	" "G""G""C""C""C"" "" "" ""C""C""C"" ""AGCC""G""C""C""C""C""CAGC""C""C"" ""AGC
I-3059	2157	AATAACACCATTGCTATACCTACTAACTTTTCAATTAGCATTACTACAGAAGTAATGCCT
S-040530	2080	" "C"" "" "" "" ""C""C""C""C""C""C""C""C"" ""CAGC"" CTC""C""C""C"" "" "" ""G"" "" "" "
I-3059	2217	GTTTCTATGGCTAAAACCTCCGTAGATTGTAATATGTACATCTGCGGAGATTCTACTGAA
S-040530	2140	" "GAGC"" "" "" ""C""G""AAG"" ""G"" "" "" ""C""C"" "" "" "" "" "" "" "" ""C""CAGC""C""G"
I-3059	2277	TGTGCTAATTTGCTTCTCCAATATGGTAGCTTTTGCACACA ACTAAATCGTGC ACTCTCA
S-040530	2200	" "C""C""C""CC"" "" ""G""G""G""C""C""C"" "" "" ""C"" "" "" ""C""G""G""C""G""C""GAGC
I-3059	2337	GGTATTGCTGCTGAACAGGATCGAACACACGTTGAAGTGTTCGCTCAAGTCAAA CAAATG
S-040530	2260	" "C""C""C""C""C""G"" "" "" ""C""G"" "" "" ""CA"A"" "" "" "" "" "" "" "" "" "" ""G""G""G"" ""
I-3059	2397	TACAAAACCCCAACTTTGAAATATTTTGGTGGTTTTAATTTTTCACAAATATTACCTGAC
S-040530	2320	" "T""G"" "" "" ""C""CC"" "" ""G""C""C""G""C""C""C""C""C""C"" "" "" ""T""G""CC""G""C"" "" "
I-3059	2457	CCTCTAAAGCCAACTAAGAGGTCCTTTTATTGAGGACTTGCTCTTTAATAAGGTGACACTC
S-040530	2380	" "" ""G"" "" "" ""C""C""C""C""C""C""C""C"" "" "" "" "" "" "" "" "" "" ""G""C""C""A"" "" "" ""C""G"
I-3059	2517	GCTGATGCTGGCTTCATGAAGCAATATGGCGAATGCCTAGGTGATATTAATGCTAGAGAT
S-040530	2440	" "C""C""C""C"" "" "" ""T"" "" "" "" "" ""G""C"" "" "" ""G"" "" "" ""G""C""C""C""C""C""CC""G""C"
I-3059	2577	CTCATTTGTGCGCAGAAGTTC AATGGGCTTACAGTGT TGCCACCTCTGCTCACTGATGAT
S-040530	2500	" "G""C""C""C""C"" "" "" "" "" ""T""C"" "" "" ""G""C"" "" "" ""C"" "" "" ""C"" "" "" "" ""G""C""C""C"
I-3059	2637	ATGATTGCTGCCTACACTGCTGCTCTAGTTAGTGGTACTGCCACTGCTGGATGGACATTT
S-040530	2560	" "" "" "" ""C"" "" "" "" "" ""A""C"" "" "" ""G""G""C""C""C""C"" "" "" "" "" ""C""C""C"" "" "" "" "" ""C""G"

FIGURE 32.2

FIGURE 32.3

A.



B.

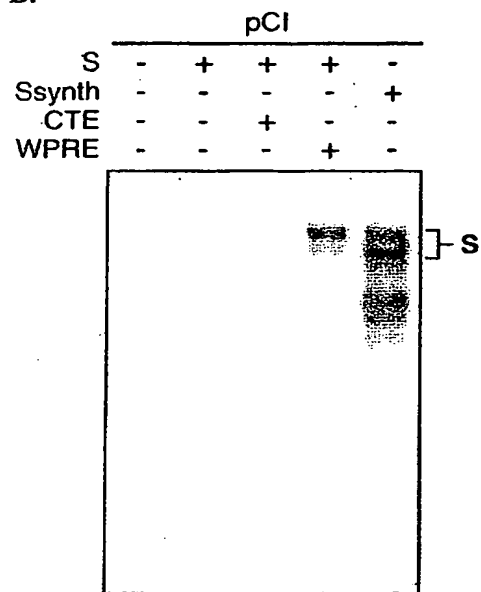
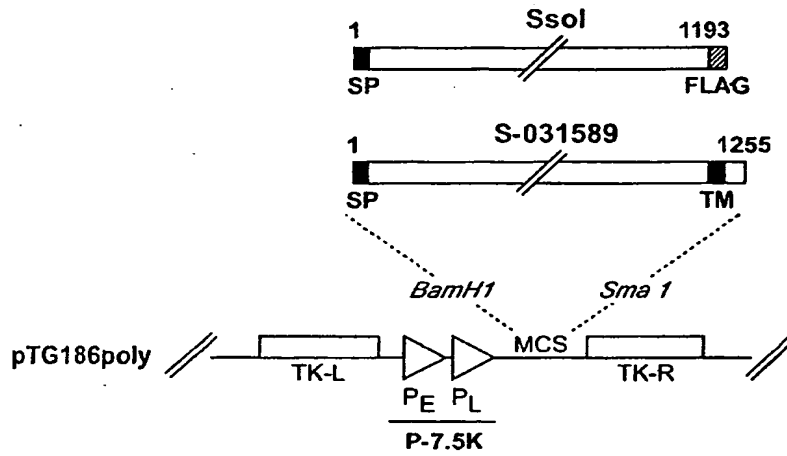
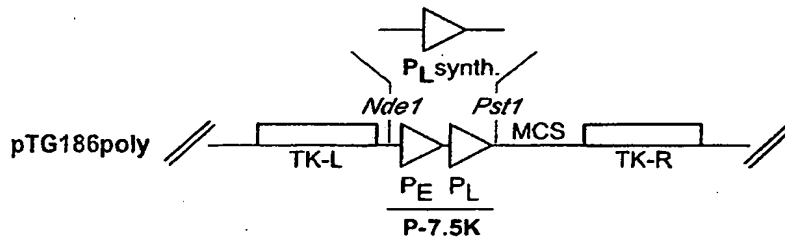


FIGURE 33

A.



B.



C.

CATATG AGC [T]₂₀GGCATATAAATA GACTC GGCGCGCC AT CTGCAG
NdeI promoteur 480 *AscI* *PstI*

FIGURE 34 A-C

D.

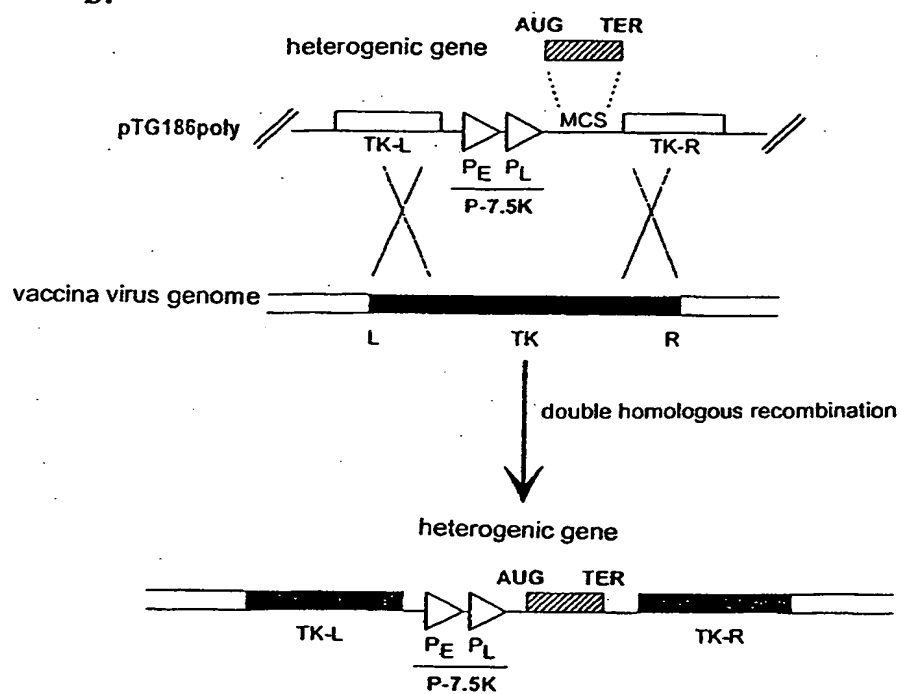
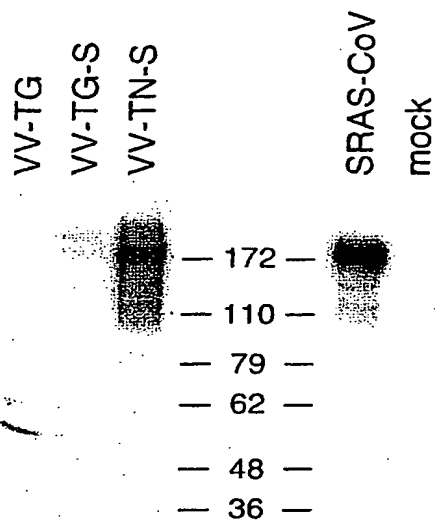


FIGURE 34 D

A.



B.

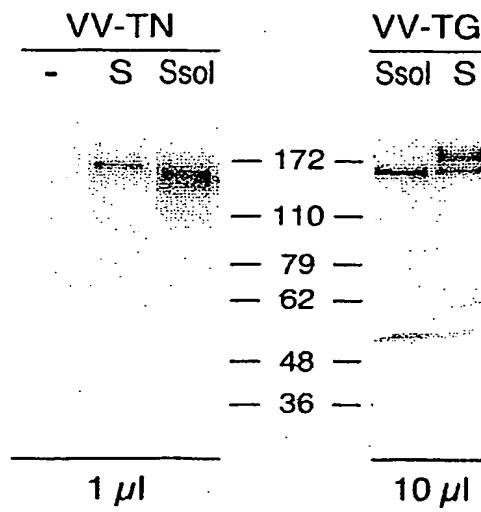
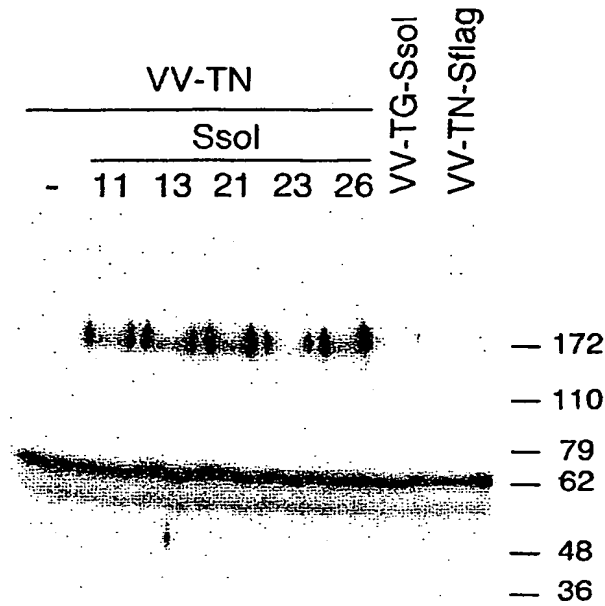


FIGURE 35

A.



B.

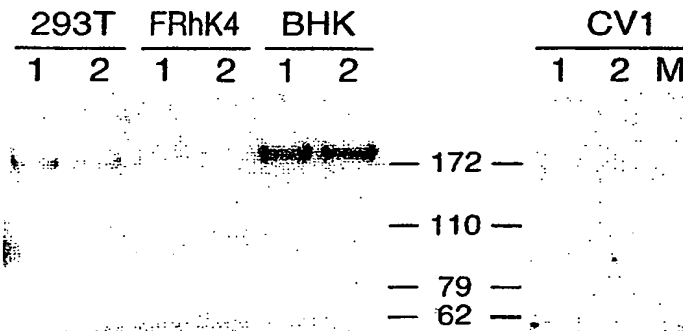


FIGURE 36

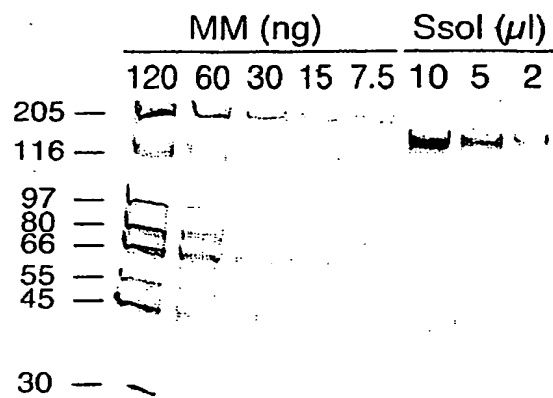
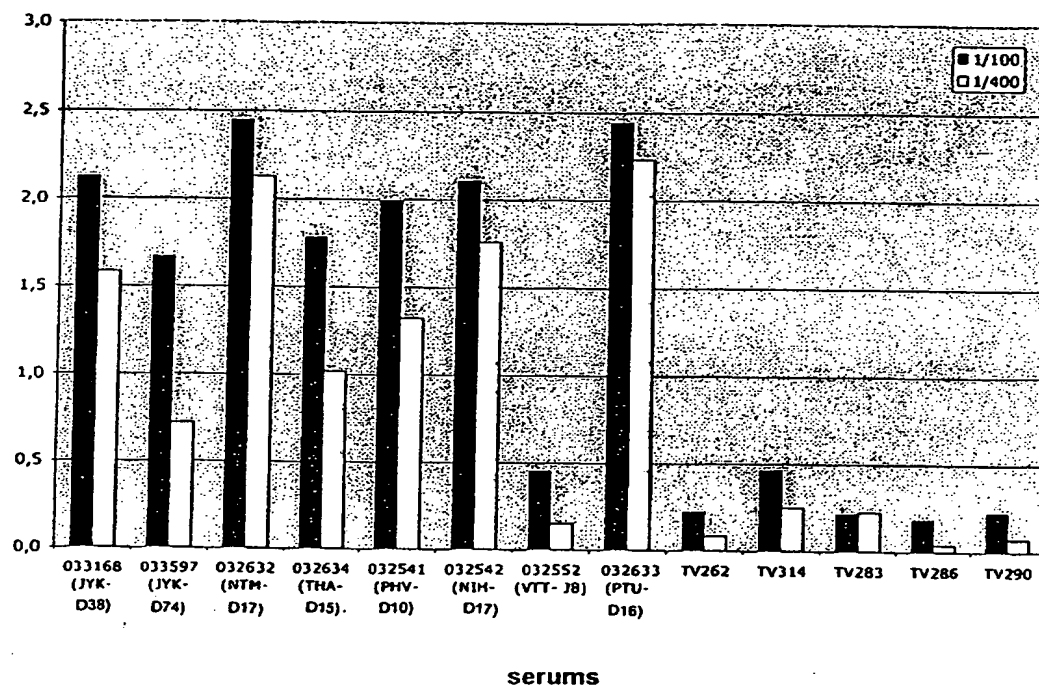
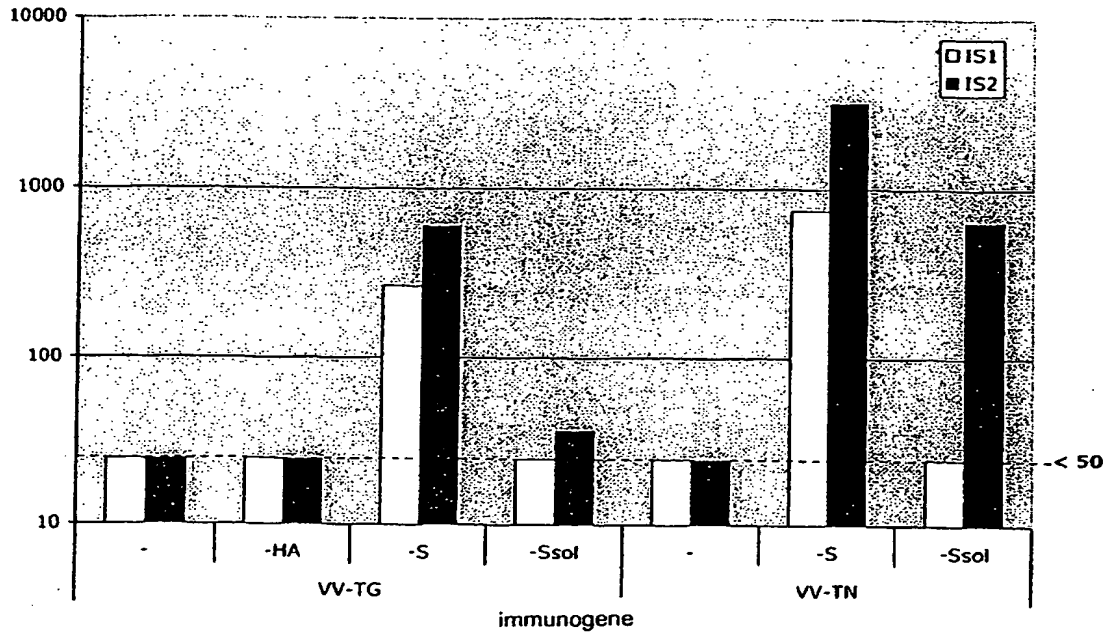


FIGURE 37



serums
FIGURE 38

A.



B.

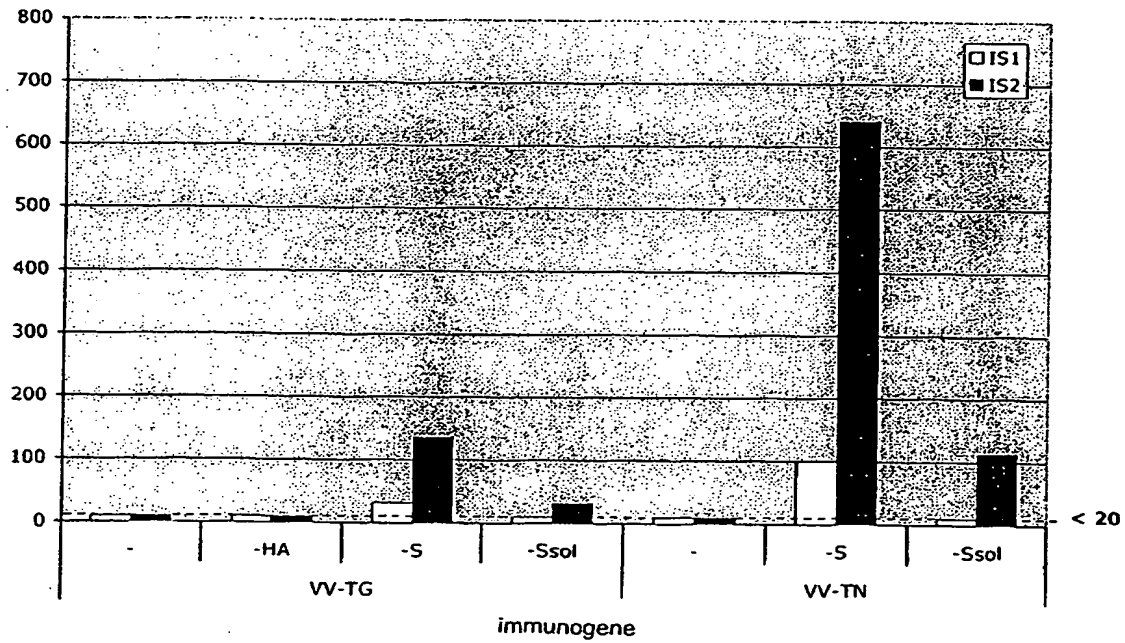


FIGURE 39

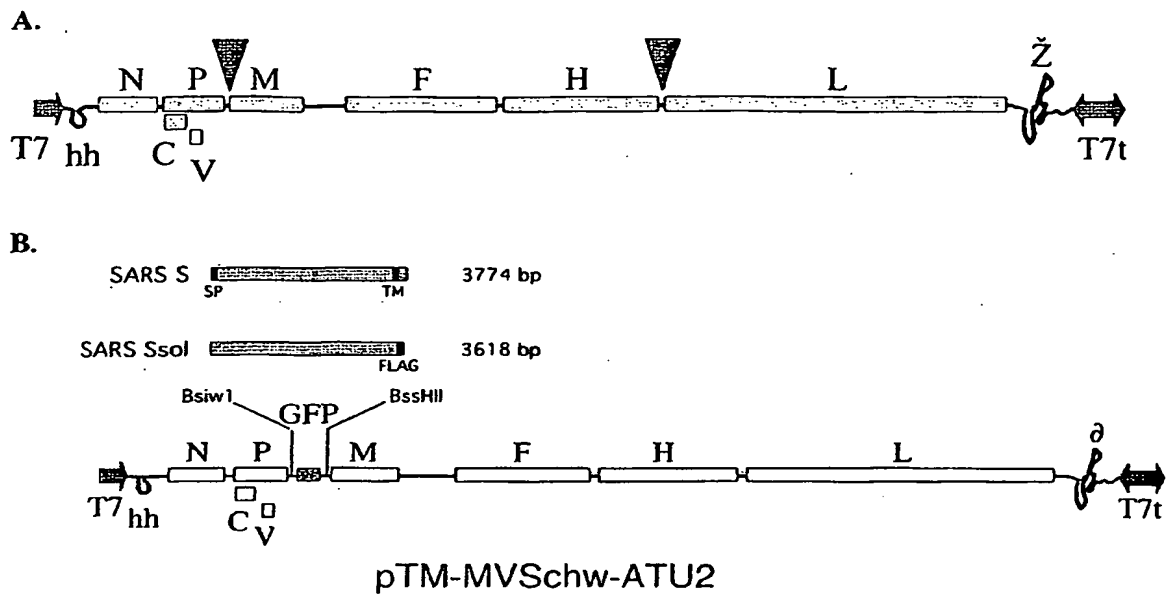


FIGURE 40

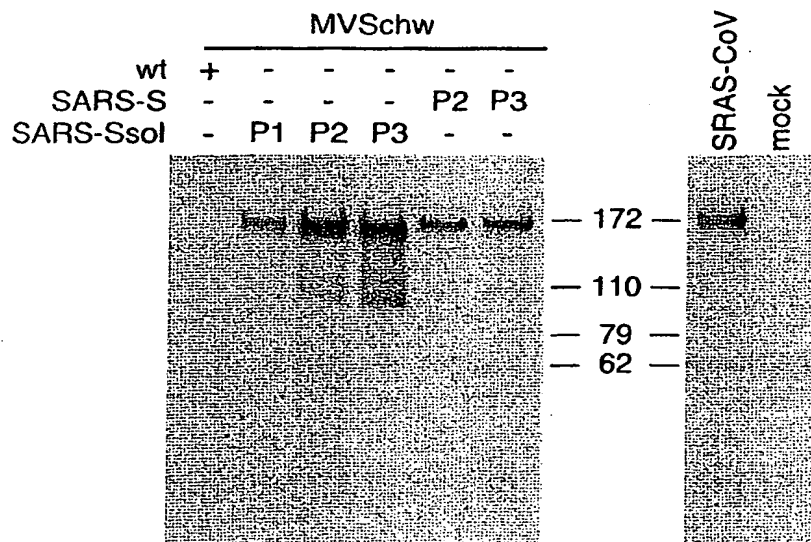


FIGURE 41

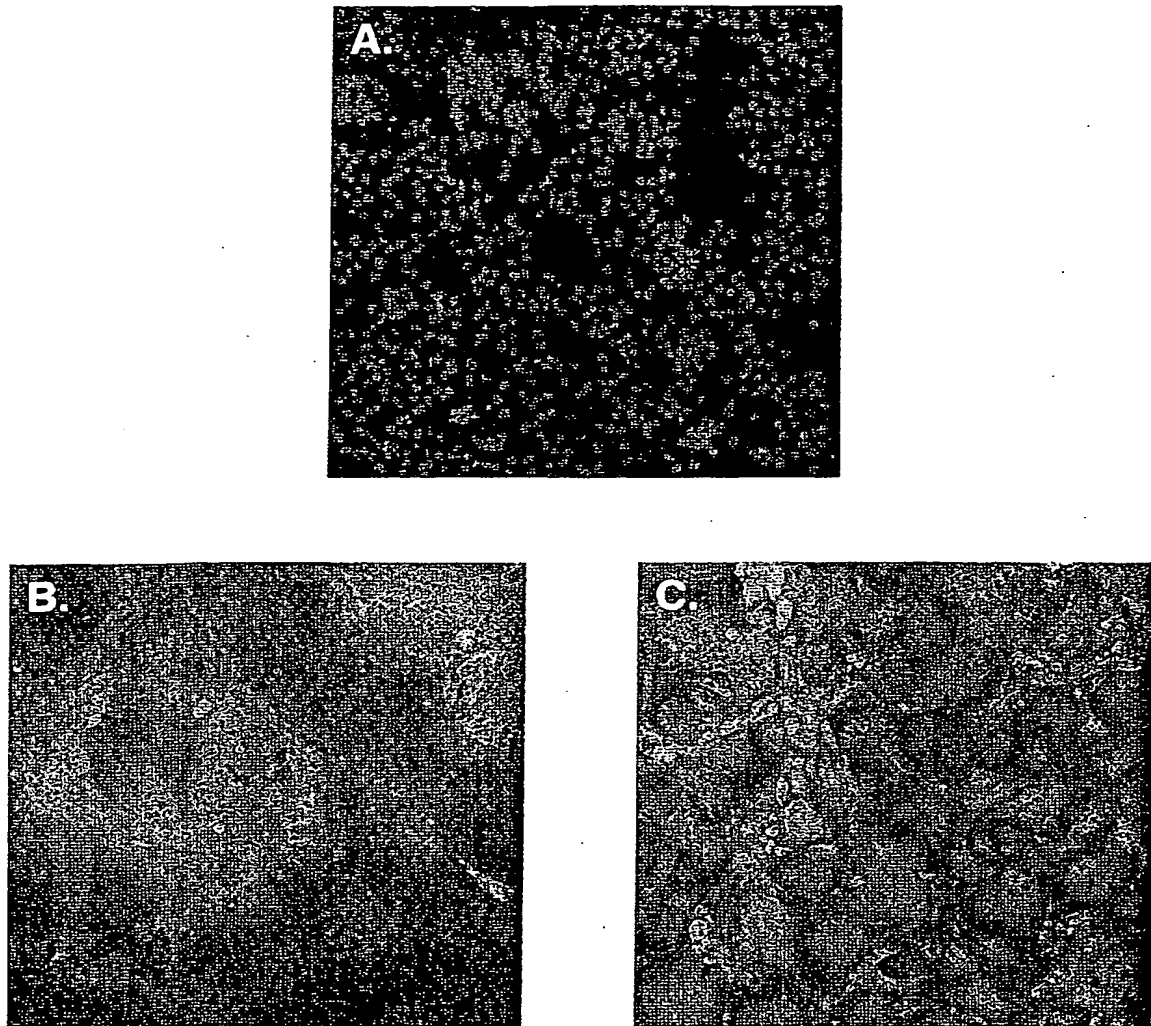


FIGURE 42

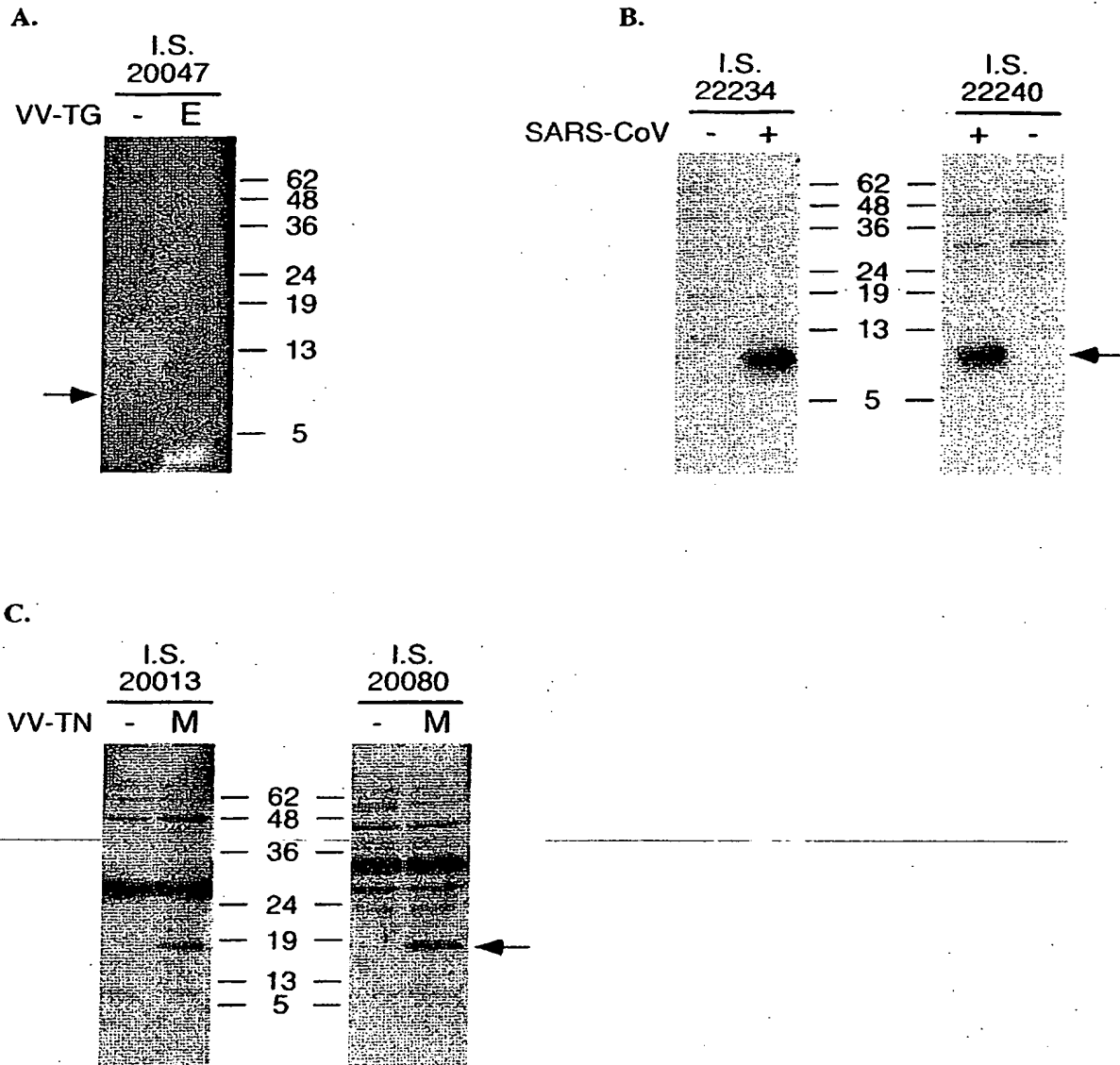


FIGURE 43

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ BLACK BORDERS
- ☐ IMAGE CUT OFF AT TOP, BOTTOM OR SIDES
- ☒ FADED TEXT OR DRAWING
- ☐ BLURRED OR ILLEGIBLE TEXT OR DRAWING
- ☐ SKEWED/SLANTED IMAGES
- ☒ COLOR OR BLACK AND WHITE PHOTOGRAPHS
- ☐ GRAY SCALE DOCUMENTS
- ☒ LINES OR MARKS ON ORIGINAL DOCUMENT
- ☐ REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY
- ☐ OTHER: _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.